أسئلة اختيار من متعدد حول كثيرات الحدود



تم تحميل هذا الملف من موقع المناهج الإماراتية	
موقع المناهج ⇦ المناهج الإماراتية ⇦ الصف العاشر المتقدم ⇦ رياضيات ⇦ الفصل الأول ⇦ ملفات متنوعة ⇦ الملف	
تاريخ إضافة الملف على موقع المناهج: 2026-11-08 14:44:26	
المزيد من مادة رياضيات:	ملفات ا كتب للمعلم ا كتب للطالب ا اختبارات الكترونية ا اختبارات ا حلول ا عروض بوربوينت ا أوراق عمل منهج انجليزي ا ملخصات وتقارير ا مذكرات وبنوك ا الامتحان النهائي ا للمدرس
	إعداد: كرم أسعد

التواصل الاجتماعي بحسب الصف العاشر المتقدم					
صفحة المناهج الإماراتية على فيسبوك					
المواد على تلغرام	التربية الاسلامية	اللغة العربية	اللغة الانجليزية	الرياضيات	

المزيد من الملفات بحسب الصف العاشر المتقدم والمادة رياضيات في الفصل الأول	
1	الهيكل الوزاري المعتمد - بريدج - 2027
2	تجميع أسئلة هيكل بريدج
3	حل تجميع للهيكل مطابق لوصف الهيكل 2027 - ريفيل
4	تجميع للهيكل مطابق لوصف الهيكل 2027 - ريفيل
5	الهيكل الوزاري المعتمد 2027 ريفيل

تحميل تطبيق المناهج للهواتف الذكية	
تطبيق المناهج على Store App (آبل)	تطبيق المناهج على Play Google (أندرويد)

ملزمة هيكل 10 متقدم

(ريفيل)

2026-2027

Mathematics

الترم الاول



إعداد

أ / كرم أسعد

@MR_KARAM_ASAAD

لا تتردد في التواصل معنا والاستعداد للامتحان بكل ثقة

0505308082

Multiple Choice Questions — أسئلة اختيار من متعدد

0505308082

Q	LEARNING OUTCOME	REVEAL (ENGLISH)	PAGE
Q1	Write polynomials in standard form; add and subtract polynomials	(10-14), (22-26)	635

Write each polynomial in standard form and identify its leading coefficient, or find each sum or difference.

1 Book #10

Write the polynomial in standard form and identify its leading coefficient: $-y^3 + 3y - 3y^2 + 2$

(A) $2 + 3y - 3y^2 - y^3$; leading coefficient 2

(B) $y^3 - 3y^2 + 3y + 2$; leading coefficient 3

(C) $-y^3 - 3y^2 + 3y + 2$; leading coefficient -1

(D) $-y^3 + 3y^2 + 3y + 2$; leading coefficient -3

مساحة الحل • Working space

Mr. Karam Asaad
0505308082

2 Book #11

Write the polynomial in standard form and identify its leading coefficient: $11t + 2t^2 - 3 + t^5$

(A) $t^5 + 2t^2 - 3 + 11t$; leading coefficient 11

(B) $-3 + 11t + 2t^2 + t^5$; leading coefficient -3

(C) $11t + 2t^2 + t^5 - 3$; leading coefficient 5

(D) $t^5 + 2t^2 + 11t - 3$; leading coefficient 1

مساحة الحل • Working space

Mr. Karam Asaad
0505308082

3 Book #12

Write the polynomial in standard form and identify its leading coefficient: $2 + r - r^3$

(A) $-r^3 + r + 2$; leading coefficient -1

(B) $-r^3 + 2 + r$; leading coefficient 1

(C) $2 + r - r^3$; leading coefficient 3

(D) $r^3 + r + 2$; leading coefficient 2

مساحة الحل • Working space

4 Book #13

Write the polynomial in standard form and identify its leading coefficient: $\frac{1}{2}x - 3x^4 + 7$

(A) $-3x^4 + 7 + \frac{1}{2}x$; leading coefficient $\frac{1}{2}$

(B) $-3x^4 + \frac{1}{2}x + 7$; leading coefficient -3

(C) $\frac{1}{2}x - 3x^4 + 7$; leading coefficient 7

(D) $3x^4 + \frac{1}{2}x + 7$; leading coefficient 4

مساحة الحل • Working space

Mr. Karam Asaad 0505308082

5 Book #14

Write the polynomial in standard form and identify its leading coefficient: $-9b^2 + 10b - b^6$

(A) $-9b^2 + 10b - b^6$; leading coefficient -9

(B) $-b^6 + 10b - 9b^2$; leading coefficient 10

(C) $-b^6 - 9b^2 + 10b$; leading coefficient -1

(D) $b^6 - 9b^2 + 10b$; leading coefficient 6

مساحة الحل • Working space

6 Book #22

Find the sum or difference: $\left(2h^2 - \frac{5}{3}h\right) + \left(\frac{11}{3}h - 3h^2\right)$

(A) $-h^2 + 2h$

(B) $-h^2 - 2h$

(C) $5h^2 + 2h$

(D) $-h^2 + \frac{16}{3}h$

مساحة الحل • Working space

7 Book #23

Find the sum or difference: $(5f + g - 2) + (-2f + 3)$

(A) $3f + g - 5$

(B) $7f + g + 1$

(C) $3f + g + 5$

(D) $3f + g + 1$

مساحة الحل • Working space

Mr. Karam Asaad 0505308082

8 Book #24

Find the sum or difference: $(6k^2 + 2k + 9) + (4k^2 - 5k)$

(A) $10k^2 - 3k + 9$

(B) $10k^2 + 7k + 9$

(C) $2k^2 - 3k + 9$

(D) $10k^4 - 3k + 9$

مساحة الحل • Working space

9 Book #25

Find the sum or difference: $(2c^2 + 6c + 4) + (5c^2 - 7)$

(A) $7c^2 + 6c + 11$

(B) $3c^2 + 6c - 3$

(C) $7c^2 + 6c - 3$

(D) $7c^4 + 6c - 3$

مساحة الحل • Working space

10 Book #26

Find the sum or difference: $(2x - 3x^2) - (7 - 8x^2)$

(A) $-11x^2 + 2x - 7$

(B) $-5x^2 + 2x - 7$

(C) $5x^2 + 2x + 7$

(D) $5x^2 + 2x - 7$

مساحة الحل • Working space

Mr. Karam Asaad 0505308082

Q	LEARNING OUTCOME	REVEAL (ENGLISH)	PAGE
Q2	Multiply binomials using the FOIL method	(1-6)	649

Find each product.

11 Book #1

$(3c-5)(c+3)$

(A) $3c^2+4c-15$

(B) $3c^2+14c-15$

(C) $3c^2-4c-15$

(D) $3c^2+4c+15$

مساحة الحل • Working space

12 Book #2

$(g+10)(2g-5)$

(A) $2g^2+15g-50$

(B) $2g^2+15g+50$

(C) $2g^2-15g-50$

(D) $2g^2+25g-50$

مساحة الحل • Working space

13 Book #3

$(6a+5)(5a+3)$

(A) $11a^2+43a+15$

(B) $30a^2+43a+8$

(C) $30a^2+43a+15$

(D) $30a^2+25a+15$

مساحة الحل • Working space

Mr. Karam Asaad 0505308082

14 Book #4

$(4x+1)(6x+3)$

(A) $24x^2+6x+3$

(B) $24x^2+18x+4$

(C) $10x^2+18x+3$

(D) $24x^2+18x+3$

مساحة الحل • Working space

15 Book #5

$(5y-4)(3y-1)$

(A) $15y^2-17y+4$

(B) $15y^2-17y-4$

(C) $15y^2+17y+4$

(D) $15y^2-7y+4$

مساحة الحل • Working space

16 Book #6

$(6d-5)(4d-7)$

(A) $24d^2-22d+35$

(B) $24d^2-62d-35$

(C) $24d^2+62d+35$

(D) $24d^2-62d+35$

مساحة الحل • Working space

Mr. Karam Asaad 0505308082

Q	LEARNING OUTCOME	REVEAL (ENGLISH)	PAGE
Q3	Factor trinomials of the form $x^2 + bx + c$	(1-6)	671

Factor each polynomial, if possible.

17 Book #1

$x^2 + 17x + 42$

(A) $(x + 6)(x + 7)$

(B) $(x + 3)(x + 14)$

(C) $(x + 2)(x + 21)$

(D) $(x - 3)(x - 14)$

مساحة الحل • Working space

18 Book #2

$y^2 - 17y + 72$

(A) $(y - 8)(y - 9)$

(B) $(y + 8)(y + 9)$

(C) $(y - 6)(y - 12)$

(D) $(y - 8)(y + 9)$

مساحة الحل • Working space

19 Book #3

$a^2 + 8a - 48$

(A) $(a + 16)(a - 3)$

(B) $(a - 12)(a + 4)$

(C) $(a + 6)(a - 8)$

(D) $(a + 12)(a - 4)$

مساحة الحل • Working space

Mr. Karam Asaad 0505308082

20 Book #4

$n^2 - 2n - 35$

(A) $(n+7)(n-5)$

(B) $(n-35)(n+1)$

(C) $(n-7)(n-5)$

(D) $(n-7)(n+5)$

مساحة الحل • Working space

21 Book #5

$44 + 15h + h^2$

(A) $(h+2)(h+22)$

(B) $(h+4)(h+11)$

(C) $(h+4)(h+15)$

(D) $(h-4)(h-11)$

مساحة الحل • Working space

22 Book #6

$40 - 22x + x^2$

(A) $(x-4)(x-10)$

(B) $(x+2)(x+20)$

(C) $(x-2)(x-20)$

(D) $(x-2)(x+20)$

مساحة الحل • Working space

Mr. Karam Asaad 0505308082

Q	LEARNING OUTCOME	REVEAL (ENGLISH)	PAGE
Q4	Factor polynomials by grouping	(11-20)	665

Factor each polynomial.

23 Book #11

$fg - 5g + 4f - 20$

(A) $(f + 4)(g - 5)$

(B) $(f - 5)(g + 4)$

(C) $(f + 5)(g - 4)$

(D) $(f - 5)(g - 4)$

مساحة الحل • Working space

24 Book #12

$a^2 - 4a - 24 + 6a$

(A) $(a - 4)(a + 6)$

(B) $(a + 4)(a - 6)$

(C) $(a - 2)(a + 12)$

(D) $(a - 4)(a - 6)$

مساحة الحل • Working space

25 Book #13

$hj - 2h + 5j - 10$

(A) $(j - 2)(h - 5)$

(B) $(j - 2)(h + 5)$

(C) $(j - 5)(h + 2)$

(D) $(j + 2)(h - 5)$

مساحة الحل • Working space

Mr. Karam Asaad 0505308082

26 Book #14

$xy - 2x - 2 + y$

(A) $(x-2)(y-1)$

(B) $(y-2)(x+1)$

(C) $(y-2)(x-1)$

(D) $(y+2)(x-1)$

مساحة الحل • Working space

27 Book #15

$45pq - 27q - 50p + 30$

(A) $(5p-3)(9q+10)$

(B) $(5p+3)(9q+10)$

(C) $(5p-3)(9q-10)$

(D) $(9p-3)(5q-10)$

مساحة الحل • Working space

28 Book #16

$24ty - 18t + 4y - 3$

(A) $(6y-3)(4t+1)$

(B) $(4y-3)(6t-1)$

(C) $(4y+3)(6t-1)$

(D) $(4y-3)(6t+1)$

مساحة الحل • Working space

Mr. Karam Asaad 0505308082

29 Book #17

$3dt - 21d + 35 - 5t$

(A) $(t-7)(3d+5)$

(B) $(t+7)(3d+5)$

(C) $(t-7)(3d-5)$

(D) $(t-5)(3d-7)$

مساحة الحل • Working space

30 Book #18

$8r^2 + 12r$

(A) $4r(2r+3)$

(B) $4(2r^2+3r)$

(C) $2r(4r+6)$

(D) $4r(2r-3)$

مساحة الحل • Working space

31 Book #19

$21th - 3t - 35h + 5$

(A) $(7h-1)(3t-5)$

(B) $(3h-1)(7t-5)$

(C) $(7h-1)(3t+5)$

(D) $(7h+1)(3t+5)$

مساحة الحل • Working space

Mr. Karam Asaad 0505308082

32 Book #20

$vp + 12v + 8p + 96$

(A) $(p - 12)(v - 8)$

(B) $(p + 12)(v + 8)$

(C) $(p + 8)(v + 12)$

(D) $(p + 12)(v - 8)$

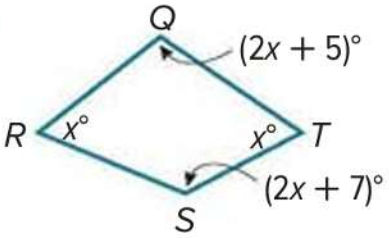
مساحة الحل • Working space

Q	LEARNING OUTCOME	REVEAL (ENGLISH)	PAGE
Q5	Find interior angle measures of polygons	(1-4)	63

Find the measure of each interior angle.

33 Book #1

Find the value of x in the polygon.



(A) $x = 58$

(B) $x = 62$

(C) $x = 56$

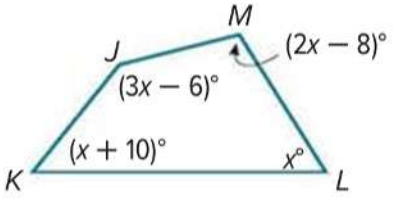
(D) $x = 60$

مساحة الحل • Working space

Mr. Karam Asaad 0505308082

34 Book #2

Find the value of x in the polygon.

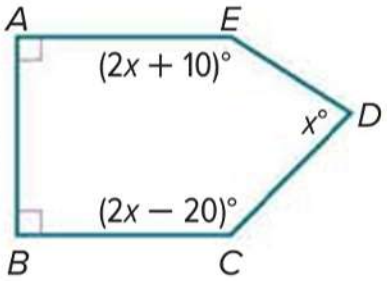


(A) $x = 52$ (B) $x = 50$ (C) $x = 54$ (D) $x = 48$

مساحة الحل • Working space

35 Book #3

Find the value of x in the polygon.



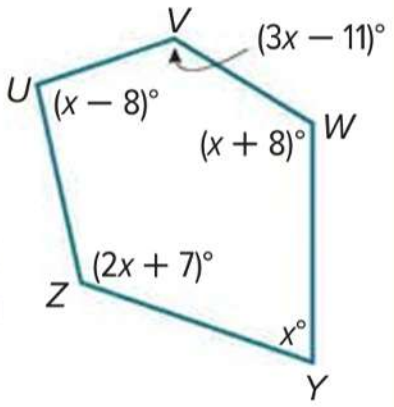
(A) $x = 72$ (B) $x = 70$ (C) $x = 74$ (D) $x = 76$

مساحة الحل • Working space

Mr. Karam Asaad 0505308082

36 Book #4

Find the value of x in the polygon.



(A) $x = 66$ (B) $x = 68$ (C) $x = 70$ (D) $x = 64$

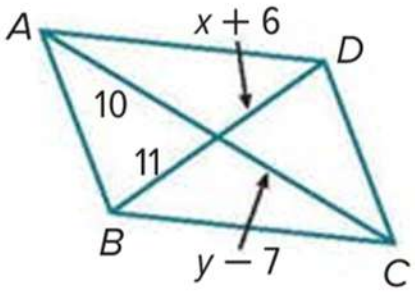
مساحة الحل • Working space

Q	LEARNING OUTCOME	REVEAL (ENGLISH)	PAGE
Q6	Use the properties of parallelograms	(9-12)	72

Find the value of each variable in each parallelogram.

37 Book #9

Find the values of the variables.



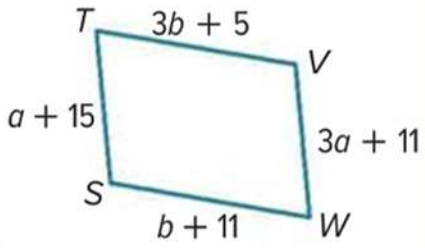
(A) $x = 5,\ y = 3$ (B) $x = 4,\ y = 17$

(C) $x = 17,\ y = 5$ (D) $x = 5,\ y = 17$

مساحة الحل • Working space

38 Book #10

Find the values of the variables.



Mr. Karam Asaad
0505308082

(A) $a = 3,\ b = 2$

(B) $a = 2,\ b = 8$

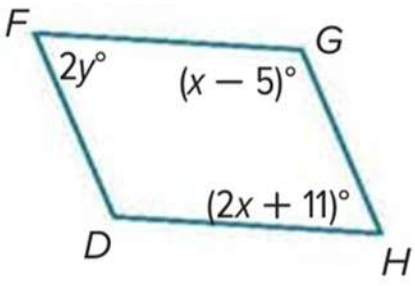
(C) $a = 4,\ b = 3$

(D) $a = 2,\ b = 3$

مساحة الحل • Working space

39 Book #11

Find the values of the variables.



(A) $x = 58,\ y = 63.5$

(B) $x = 64.5,\ y = 63.5$

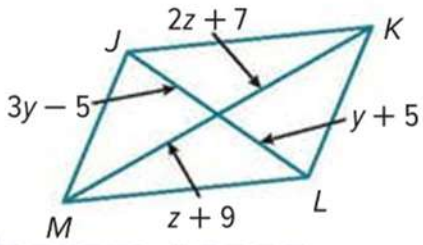
(C) $x = 58,\ y = 58$

(D) $x = 58,\ y = 31.75$

مساحة الحل • Working space

40 Book #12

Find the values of the variables.



Mr. Karam Asaad
0505308082

(A) $y = -5,\ z = 2$

(B) $y = 2,\ z = 5$

(C) $y = 5,\ z = -2$

(D) $y = 5,\ z = 2$

مساحة الحل • Working space

Q	LEARNING OUTCOME	REVEAL (ENGLISH)	PAGE
Q7	Conditions for parallelograms	(1-6)	75

Determine whether each quadrilateral is a parallelogram. Justify your answer.

41 Book #1

Is the quadrilateral a parallelogram? Choose the correct justification.



(A) Yes; both pairs of opposite sides are congruent

(B) Yes; one pair of opposite sides is both congruent and parallel

(C) Yes; both pairs of opposite angles are congruent

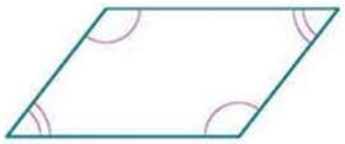
(D) No; the marked parts do not satisfy any test for a parallelogram

مساحة الحل • Working space

Mr. Karam Asaad Contact: 0505308082

42 Book #2

Is the quadrilateral a parallelogram? Choose the correct justification.



(A) Yes; both pairs of opposite sides are congruent

(B) No; the marked parts do not satisfy any test for a parallelogram

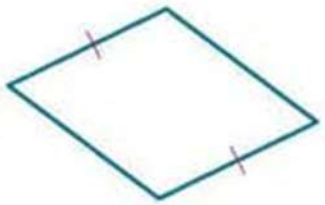
(C) Yes; both pairs of opposite angles are congruent

(D) Yes; one pair of opposite sides is both congruent and parallel

مساحة الحل • Working space

43 Book #3

Is the quadrilateral a parallelogram? Choose the correct justification.



(A) Yes; the diagonals bisect each other

(B) No; the marked parts do not satisfy any test for a parallelogram

(C) Yes; one pair of opposite sides is both congruent and parallel

(D) Yes; both pairs of opposite sides are congruent

مساحة الحل • Working space

Mr. Karam Asaad 0505308082

44 Book #4

Is the quadrilateral a parallelogram? Choose the correct justification.



(A) Yes; one pair of opposite sides is both congruent and parallel

(B) Yes; both pairs of opposite sides are congruent

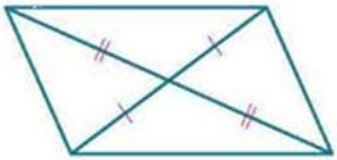
(C) Yes; both pairs of opposite angles are congruent

(D) Yes; the diagonals bisect each other

مساحة الحل • Working space

45 Book #5

Is the quadrilateral a parallelogram? Choose the correct justification.



(A) Yes; the diagonals bisect each other

(B) Yes; both pairs of opposite sides are congruent

(C) Yes; one pair of opposite sides is both congruent and parallel

(D) Yes; both pairs of opposite angles are congruent

مساحة الحل • Working space

Mr. Karam Asaad 0505308082

46 Book #6

Is the quadrilateral a parallelogram? Choose the correct justification.



(A) Yes; both pairs of opposite sides are congruent

(B) Yes; one pair of opposite sides is both congruent and parallel

(C) No; one pair of sides is parallel and the other pair is only congruent

(D) Yes; both pairs of opposite angles are congruent

مساحة الحل • Working space

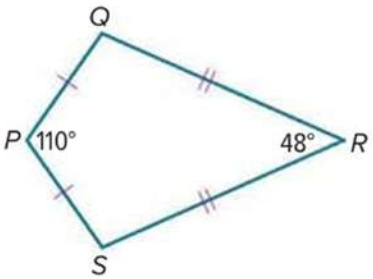
Mr. Karam Asaad 0505308082

Q	LEARNING OUTCOME	REVEAL (ENGLISH)	PAGE
Q8	Use the properties of kites	(13-16)	106

Find each measure in the kites.

47 Book #13

Quadrilateral $PQRS$ is a kite with $m\angle P = 110°$ and $m\angle R = 48°$. Find $m\angle Q$.

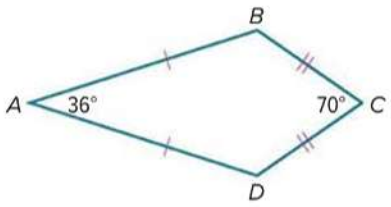


(A) $101°$ (B) $110°$ (C) $202°$ (D) $99°$

مساحة الحل • Working space

48 Book #14

Quadrilateral *ABCD* is a kite with $m\angle A = 36°$ and $m\angle C = 70°$. Find $m\angle D$.

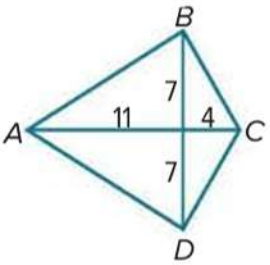


(A) $254°$ (B) $147°$ (C) $106°$ (D) $127°$

مساحة الحل • Working space

49 Book #15a

Quadrilateral *ABCD* is a kite. Find *BC* in simplest radical form.



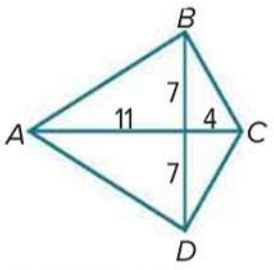
(A) $\sqrt{137}$ (B) $8\sqrt{2}$ (C) $\sqrt{170}$ (D) $\sqrt{65}$

مساحة الحل • Working space

Mr. Karam Asaad 0505308082

50 Book #15b

Find the perimeter of kite *ABCD* (nearest tenth).

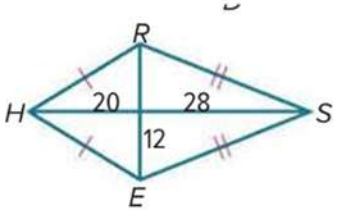


(A) 21.1 (B) 46.0 (C) 42.2 (D) 36.0

مساحة الحل • Working space

51 Book #16a

Quadrilateral *HRSE* is a kite. Find *RH* in simplest radical form.

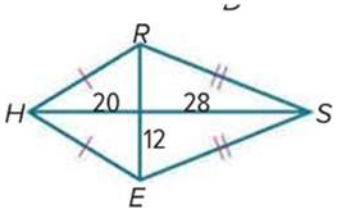


(A) $\sqrt{544}$ (B) $4\sqrt{17}$ (C) $2\sqrt{34}$ (D) $4\sqrt{34}$

مساحة الحل • Working space

52 Book #16b

Find the perimeter of kite *HRSE* (nearest tenth).



(A) 93.2 (B) 53.8 (C) 46.6 (D) 107.6

مساحة الحل • Working space

Mr. Karam Asaad 0505308082

Q	LEARNING OUTCOME	REVEAL (ENGLISH)	PAGE
Q9	Dilations in the coordinate plane	(13-16, 20)	120-121

Find the vertices of the image of each polygon after a dilation centered at the origin with the given scale factor.

53 Book #13

Polygon *FGH* has vertices $F(-10, 4),\ G(-4, 4),\ H(-4, -8)$. Scale factor $k = 0.25$. Find the image vertices.

(A) $F'(-2.5, 1),\ G'(-1, 1),\ H'(-1, -2)$

(B) $F'(-2.5, 1),\ G'(-1, 1),\ H'(-1, -8)$

(C) $F'(2.5, -1),\ G'(1, -1),\ H'(1, 2)$

(D) $F'(-40, 16),\ G'(-16, 16),\ H'(-16, -32)$

مساحة الحل • Working space

54 Book #14

Polygon *XYZ* has vertices $X(2, -1),\ Y(-6, 4),\ Z(-2, -5)$. Scale factor $k = \frac{5}{4}$. Find the image vertices.

(A) $X'(2.5, -1.25),\ Y'(-7.5, 5),\ Z'(-2.5, -6.25)$

(B) $X'(2.25, -0.25),\ Y'(-4.75, 5.25),\ Z'(-0.75, -3.75)$

(C) $X'(1.6, -0.8),\ Y'(-4.8, 3.2),\ Z'(-1.6, -4)$

(D) $X'(10, -5),\ Y'(-30, 20),\ Z'(-10, -25)$

مساحة الحل • Working space

Mr. Karam Asaad 0505308082

55 Book #15

Polygon *MNP* has vertices $M(4,6),\ N(-6,2),\ P(0,-8)$. Scale factor $k=\frac{3}{4}$. Find the image vertices.

(A) $M'(4.5,3),\ N'(1.5,-4.5),\ P'(-6,0)$

(B) $M'(4.75,6.75),\ N'(-5.25,2.75),\ P'(0.75,-7.25)$

(C) $M'(3,4.5),\ N'(-4.5,1.5),\ P'(0,-6)$

(D) $M'(12,18),\ N'(-18,6),\ P'(0,-24)$

مساحة الحل • Working space

56 Book #16

Polygon *RST* has vertices $R(-2,6),\ S(0,-1),\ T(-5,3)$. Scale factor $k=1.5$. Find the image vertices.

(A) $R'(3,-9),\ S'(0,1.5),\ T'(7.5,-4.5)$

(B) $R'(-3,9),\ S'(0,-1.5),\ T'(-7.5,4.5)$

(C) $R'(-3,6),\ S'(0,-1),\ T'(-7.5,3)$

(D) $R'(-1,3),\ S'(0,-0.5),\ T'(-2.5,1.5)$

مساحة الحل • Working space

Mr. Karam Asaad 0505308082

57 Book #20

TRIANGLE $\triangle ABC$ has vertices $A(2, 2)$, $B(3, 4)$ and $C(5, 2)$. What are the coordinates of the image of point C after a dilation centered at the origin with scale factor 2.5?

(A) $(5,\ 12.5)$ (B) $(12.5,\ 5)$ (C) $(7.5,\ 4.5)$ (D) $(10,\ 4)$

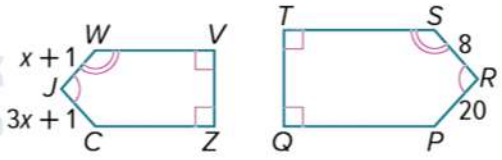
مساحة الحل • Working space

Q	LEARNING OUTCOME	REVEAL (ENGLISH)	PAGE
Q10	Use similar polygons to find missing measures	(11-14)	128

Each pair of polygons is similar. Find the value of *x*.

58 Book #11

Find the value of *x*.

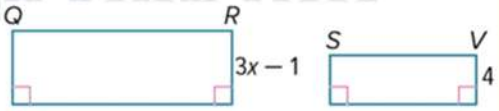


(A) $x = 2$ (B) $x = 4$ (C) $x = 5$ (D) $x = 3$

مساحة الحل • Working space

59 Book #12

Find the value of *x*.



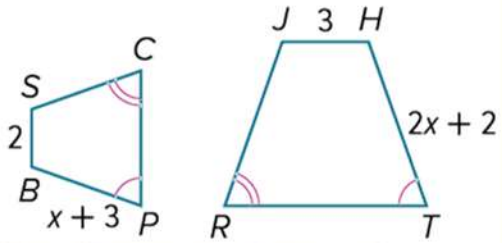
(A) $x = 2$ (B) $x = 3$ (C) $x = 1$ (D) $x = 4$

مساحة الحل • Working space

Mr. Karam Asaad 0505308082

60 Book #13

Find the value of x.



Mr. Karam Asaad
0505308082

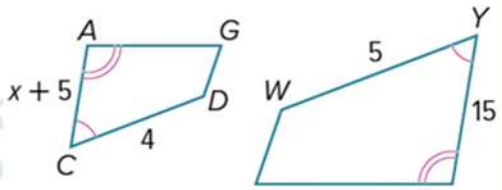
(A) $x = 7$ (B) $x = 5$ (C) $x = 6$ (D) $x = 4$

مساحة الحل • Working space

Mr. Karam Asaad
0505308082

61 Book #14

Find the value of x.



Mr. K
0

(A) $x = 9$ (B) $x = 8$ (C) $x = 5$ (D) $x = 7$

مساحة الحل • Working space

Mr. Karam Asaad
0505308082

Mr. Karam Asaad
0505308082

Mr. Karam Asaad
0505308082

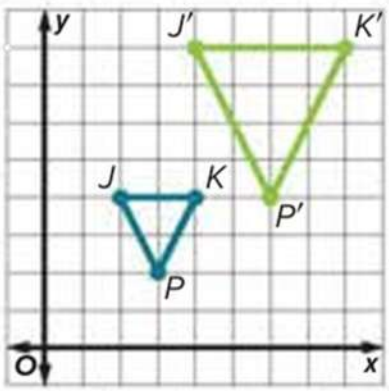
Mr. Karam Asaad
0505308082

Q	LEARNING OUTCOME	REVEAL (ENGLISH)	PAGE
Q11	Find the scale factor of a dilation	(10-12, 17-18)	120

Find the scale factor of the dilation.

62 Book #10

Find the scale factor of the dilation (image ÷ original).

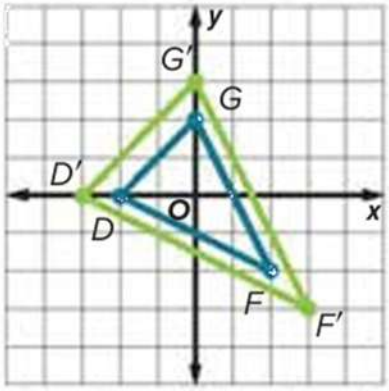


(A) $k = 3$ (B) $k = 4$ (C) $k = 2$ (D) $k = \frac{1}{2}$

مساحة الحل • Working space

63 Book #11

Find the scale factor of the dilation (image ÷ original).



(A) $k = \frac{2}{3}$ (B) $k = 2$ (C) $k = 1.5$ (D) $k = 3$

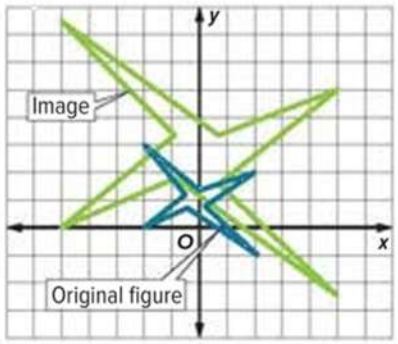
مساحة الحل • Working space

Mr. Karam Asaad 0505308082

64

Book #12

Find the scale factor of the dilation (image ÷ original).



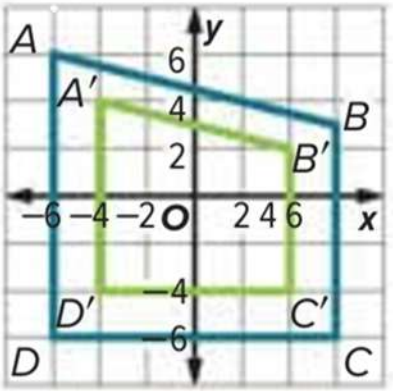
(A) $k = 3$ (B) $k = 2.5$ (C) $k = 0.4$ (D) $k = 2$

مساحة الحل • Working space

65

Book #17

Find the scale factor of the dilation (image ÷ original).



(A) $k = \frac{1}{3}$ (B) $k = \frac{3}{2}$ (C) $k = 2$ (D) $k = \frac{2}{3}$

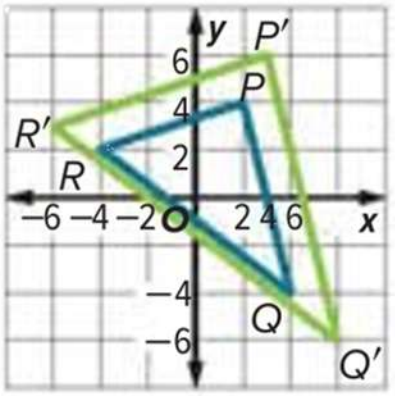
مساحة الحل • Working space

Mr. Karam Asaad 0505308082

66

Book #18

Find the scale factor of the dilation (image ÷ original).



(A) $k = 1.5$

(B) $k = 2$

(C) $k = \frac{2}{3}$

(D) $k = 0.5$

مساحة الحل • Working space

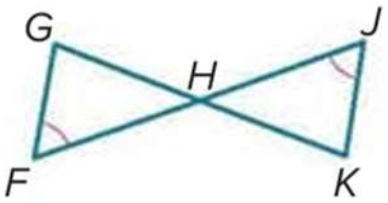
Mr. Karam Asaad
0505308082

Q	LEARNING OUTCOME	REVEAL (ENGLISH)	PAGE
Q12	AA similarity of triangles	(1-8)	133

Determine whether each pair of triangles is similar. Explain your reasoning. Then solve the applications.

67 Book #1

Are the triangles similar? Choose the correct statement.



(A) Similar; AA Similarity (vertical angles are congruent and one other pair of angles is congruent)

(B) Cannot be determined; only one pair of congruent angles (the vertical angles) is given

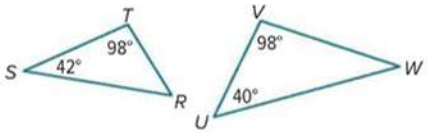
(C) Similar; SSS Similarity (all three side ratios are equal)

(D) Not similar; the corresponding angles are not congruent

مساحة الحل • Working space

68 Book #2

Are the triangles similar? Choose the correct statement.



(A) Cannot be determined; only one pair of congruent angles (the vertical angles) is given

(B) Not similar; the corresponding sides are not proportional

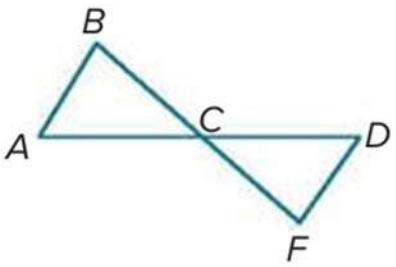
(C) Similar; AA Similarity (two pairs of congruent angles)

(D) Not similar; the corresponding angles are not congruent

مساحة الحل • Working space

69 Book #3

Are the triangles similar? Choose the correct statement.



(A) Similar; AA Similarity (two pairs of congruent angles)

(B) Not similar; the corresponding sides are not proportional

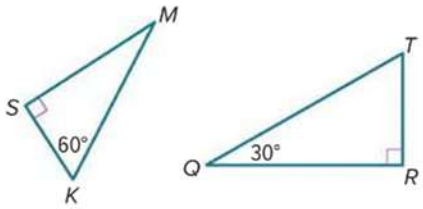
(C) Cannot be determined; only one pair of congruent angles (the vertical angles) is given

(D) Similar; SSS Similarity (all three side ratios are equal)

مساحة الحل • Working space

70 Book #4

Are the triangles similar? Choose the correct statement.



(A) Not similar; the corresponding sides are not proportional

(B) Similar; AA Similarity (two pairs of congruent angles)

(C) Cannot be determined; only one pair of congruent angles (the vertical angles) is given

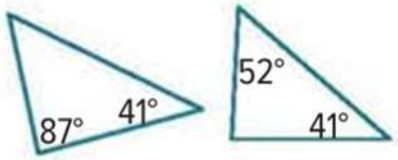
(D) Not similar; the corresponding angles are not congruent

مساحة الحل • Working space

Mr. Karam Asaad 0505308082

71 Book #5

Are the triangles similar? Choose the correct statement.



(A) Not similar; the corresponding angles are not congruent

(B) Not similar; the corresponding sides are not proportional

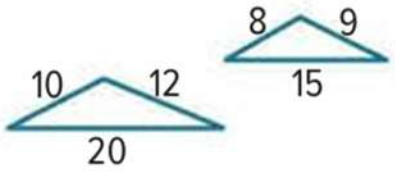
(C) Cannot be determined; only one pair of congruent angles (the vertical angles) is given

(D) Similar; AA Similarity (two pairs of congruent angles)

مساحة الحل • Working space

72 Book #6

Are the triangles similar? Choose the correct statement.



(A) Not similar; the corresponding sides are not proportional

(B) Not similar; the corresponding angles are not congruent

(C) Similar; SSS Similarity (all three side ratios are equal)

(D) Similar; AA Similarity (two pairs of congruent angles)

مساحة الحل • Working space

Mr. Karam Asaad 0505308082

73 Book #7

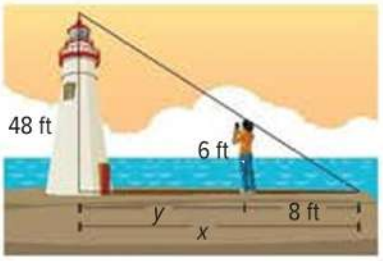
CELL TOWERS A cell phone tower casts a shadow that is 100 feet long. At the same time, Lia stands near the tower and casts a shadow that is 3 feet 4 inches long. If Lia is 4 feet 6 inches tall, how tall is the cell phone tower?

(A) 135 ft (B) 148.1 ft (C) 13.5 ft (D) 45 ft

مساحة الحل • Working space

74 Book #8a

LIGHTHOUSE Maya wants to know how far she is standing from a lighthouse. The end of Maya's shadow coincides with the end of the lighthouse's shadow. The lighthouse is 48 ft tall, Maya is 6 ft tall and her shadow is 8 ft long. What is the distance from the lighthouse to the end of the lighthouse's shadow, x?



(A) 8 ft (B) 64 ft (C) 384 ft (D) 56 ft

مساحة الحل • Working space

75 Book #8b

In the same problem, what is the distance from Maya to the lighthouse, y?

(A) 72 ft (B) 64 ft (C) 56 ft (D) 8 ft

مساحة الحل • Working space

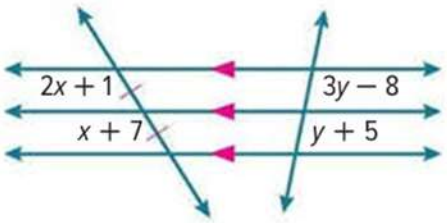
Mr. Karam Asaad 0505308082

Q	LEARNING OUTCOME	REVEAL (ENGLISH)	PAGE
Q13	Proportional parts within triangles and midsegments	(11-16)	146

Find the values of the variables. For 13–15, $\overline{JH}$ is a midsegment of $\triangle KLM$.

76 Book #11

Three parallel lines cut two transversals as shown. Find x and y.



(A) $x = 6,\ y = 2$

(B) $x = 6,\ y = 6.5$

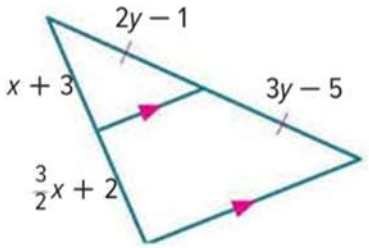
(C) $x = 5,\ y = 6.5$

(D) $x = 7,\ y = 6.5$

مساحة الحل • Working space

77 Book #12

Find x and y.



(A) $x = 2,\ y = 4$

(B) $x = 4,\ y = 2$

(C) $x = 2,\ y = 3$

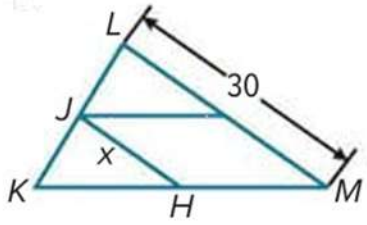
(D) $x = -2,\ y = 4$

مساحة الحل • Working space

Mr. Karam Asaad 0505308082

78 Book #13

$\overline{JH}$ is a midsegment of $\triangle KLM$. $LM = 30$. Find x (the length of $\overline{JH}$).

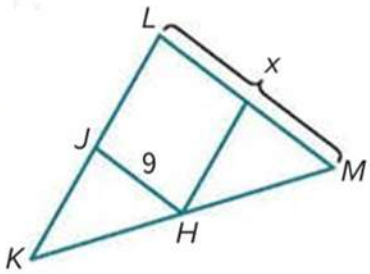


(A) $x = 30$ (B) $x = 10$ (C) $x = 15$ (D) $x = 60$

مساحة الحل • Working space

79 Book #14

$\overline{JH}$ is a midsegment of $\triangle KLM$. $JH = 9$. Find x (the length of the side parallel to $\overline{JH}$, marked).

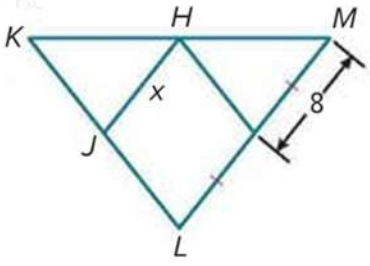


(A) $x = 27$ (B) $x = 4.5$ (C) $x = 18$ (D) $x = 9$

مساحة الحل • Working space

80 Book #15

$\overline{JH}$ is a midsegment of $\triangle KLM$. Use the figure to find x.



(A) $x = 4$ (B) $x = 16$ (C) $x = 2$ (D) $x = 8$

مساحة الحل • Working space

Mr. Karam Asaad 0505308082

81 Book #16

In $\triangle ABC$, $\overline{DE} \parallel \overline{AC}$ and $DE = 10$. Find the length of $\overline{AC}$ if $\overline{DE}$ is a midsegment of $\triangle ABC$.

(A) $AC = 30$ (B) $AC = 5$ (C) $AC = 10$ (D) $AC = 20$

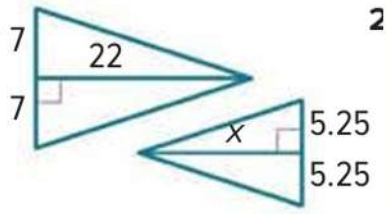
مساحة الحل • Working space

Q	LEARNING OUTCOME	REVEAL (ENGLISH)	PAGE
Q14	Proportional parts of similar triangles	(1-11)	153

Find the value of *x*. Use the fact that corresponding altitudes, medians and angle bisectors of similar triangles are proportional to the corresponding sides.

82 Book #1

Find the value of *x* (nearest tenth if necessary).



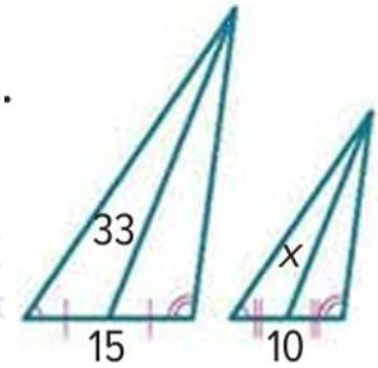
(A) $x = 12.6$ (B) $x = 17.5$ (C) $x = 16.5$ (D) $x = 14.7$

مساحة الحل • Working space

Mr. Karam Asaad 0505308082

83 Book #2

Find the value of x (nearest tenth if necessary).

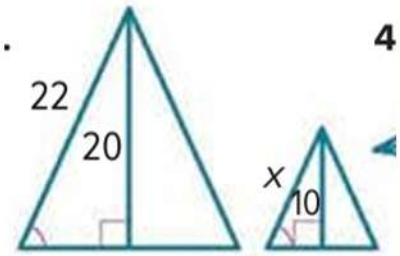


(A) $x = 23$ (B) $x = 15$ (C) $x = 22$ (D) $x = 19.8$

مساحة الحل • Working space

84 Book #3

Find the value of x (nearest tenth if necessary).



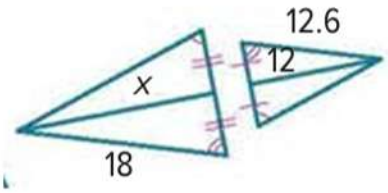
(A) $x = 9$ (B) $x = 11$ (C) $x = 12.1$ (D) $x = 10$

مساحة الحل • Working space

Mr. Karam Asaad 0505308082

85 Book #4

Find the value of x (nearest tenth if necessary).



(A) $x = 8.4$ (B) $x = 18.9$ (C) $x = 16.8$ (D) $x = 17.1$

مساحة الحل • Working space

86 Book #5

If $\triangle RST \sim \triangle EFG$, $\overline{SH}$ is an altitude of $\triangle RST$, $\overline{FJ}$ is an altitude of $\triangle EFG$, $ST = 6$, $SH = 5$, and $FJ = 7$, find *FG*.

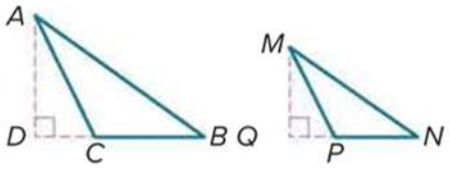


(A) 4.3 (B) 9.8 (C) 7.1 (D) 8.4

مساحة الحل • Working space

87 Book #6

If $\triangle ABC \sim \triangle MNP$, $\overline{AD}$ is an altitude of $\triangle ABC$, $\overline{MQ}$ is an altitude of $\triangle MNP$, $AB = 24$, $AD = 14$, and $MQ = 10.5$, find *MN*.



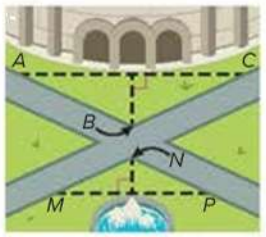
(A) 24.5 (B) 18 (C) 14 (D) 13.6

مساحة الحل • Working space

Mr. Karam Asaad 0505308082

88 Book #7

SCENERY The intersection of the two paths shown forms two similar triangles. If $AC = 50$ yards, $MP = 35$ yards, and the fountain is 5 yards from the intersection, about how far from the intersection is the stadium entrance? Round to the nearest yard.

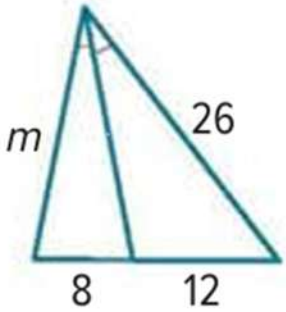


(A) 10 yd (B) 4 yd (C) 3.5 yd (D) 7 yd

مساحة الحل • Working space

89 Book #8

Find the value of m to the nearest tenth. (The segment from the top vertex bisects the angle and divides the base into 8 and 12.)



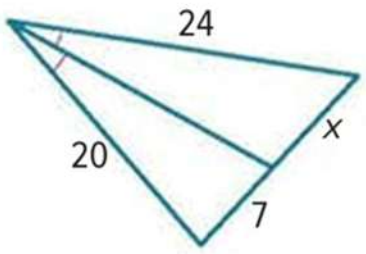
(A) $m \approx 39$ (B) $m \approx 15.6$ (C) $m \approx 17.3$ (D) $m \approx 21.7$

مساحة الحل • Working space

Mr. Karam Asaad 0505308082

90 Book #9

Find the value of x to the nearest tenth. (The segment drawn bisects the angle at the left vertex.)

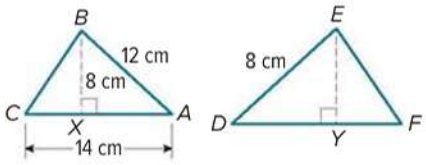


(A) $x = 24.5$ (B) $x = 5.8$ (C) $x = 2.9$ (D) $x = 8.4$

مساحة الحل • Working space

91 Book #10

For Exercises 10 and 11, $\triangle ABC \sim \triangle DEF$. Find the length of $\overline{XC}$ to the nearest tenth.



(A) 5.1 cm (B) 9.3 cm (C) 8.9 cm (D) 6 cm

مساحة الحل • Working space

92 Book #11

In the same figure ($\triangle ABC \sim \triangle DEF$), find the length of $\overline{EY}$ to the nearest tenth.

(A) 6.4 cm (B) 5.3 cm (C) 12 cm (D) 4.8 cm

مساحة الحل • Working space

Mr. Karam Asaad 0505308082

Q	LEARNING OUTCOME	REVEAL (ENGLISH)	PAGE
Q15	Geometric mean and right-triangle altitude relationships	(1-6), (11-14)	165

Find the geometric mean between each pair of numbers, then find the values of *x*, *y* and *z*.

93 Book #1

Find the geometric mean between 4 and 6 (nearest tenth if necessary).

(A) $\sqrt{10} \approx 3.2$ (B) 24 (C) $2\sqrt{6} \approx 4.9$ (D) 5

مساحة الحل • Working space

94 Book #2

Find the geometric mean between $\frac{1}{2}$ and 2 (nearest tenth if necessary).

(A) 1.25 (B) $\frac{1}{4}$ (C) 1 (D) 2

مساحة الحل • Working space

95 Book #3

Find the geometric mean between 4 and 25 (nearest tenth if necessary).

(A) 14.5 (B) 10 (C) 100 (D) 29

مساحة الحل • Working space

96 Book #4

Find the geometric mean between 12 and 20 (nearest tenth if necessary).

(A) 8 (B) 16 (C) $2\sqrt{60} \approx 15.5$ (D) 240

مساحة الحل • Working space

Mr. Karam Asaad 0505308082

97 Book #5

Find the geometric mean between 17 and 3 (nearest tenth if necessary).

(A) 14 (B) 51 (C) 10 (D) $\sqrt{51} \approx 7.1$

مساحة الحل • Working space

98 Book #6

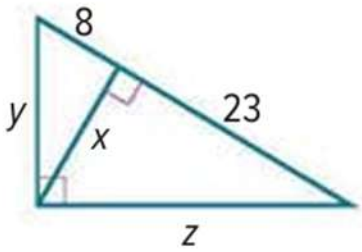
Find the geometric mean between 3 and 24 (nearest tenth if necessary).

(A) 13.5 (B) 72 (C) 10 (D) $6\sqrt{2} \approx 8.5$

مساحة الحل • Working space

99 Book #11

Find the values of *x*, *y* and *z*.



(A) $x \approx 13.56,\ y \approx 15.75,\ z \approx 26.70$

(B) $x \approx 13.56,\ y \approx 26.70,\ z \approx 15.75$

(C) $x \approx 15.5,\ y \approx 12.2,\ z \approx 21.7$

(D) $x \approx 11.3,\ y \approx 8.5,\ z \approx 25.1$

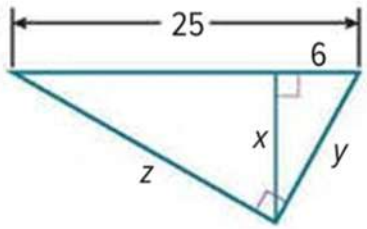
مساحة الحل • Working space

Mr. Karam Asaad 0505308082

100

Book #12

Find the values of x, y and z.



Mr. Karam Asaad
0505308082

(A) $x \approx 10.68,\ y \approx 12.25,\ z \approx 21.79$

(B) $x \approx 9.8,\ y \approx 12.2,\ z \approx 20.5$

(C) $x \approx 12.2,\ y \approx 10.7,\ z \approx 21.8$

(D) $x \approx 10.68,\ y \approx 21.79,\ z \approx 12.25$

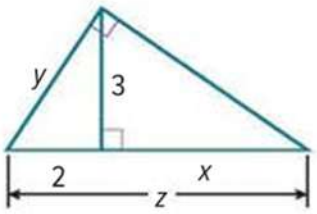
مساحة الحل • Working space

Mr. Karam Asaad
0505308082

101

Book #13

Find the values of x, y and z.



Mr. Karam Asaad
0505308082

(A) $x = 9,\ y \approx 3.61,\ z = 11$

(B) $x = 4.5,\ y = 3,\ z = 6.5$

(C) $x = 4.5,\ y \approx 3.61,\ z = 6.5$

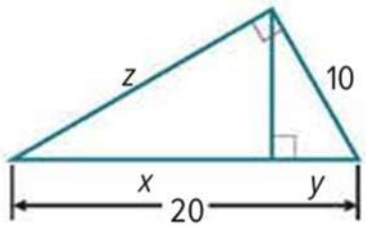
(D) $x = 4,\ y \approx 3.61,\ z = 6$

مساحة الحل • Working space

Mr. Karam Asaad
0505308082

102 Book #14

Find the values of x, y and z.



Mr. Karam Asaad
0505308082

(A) $x = 12,\ y = 8,\ z \approx 14.1$

(B) $x = 5,\ y = 15,\ z \approx 17.32$

(C) $x = 15,\ y = 5,\ z = 20$

(D) $x = 15,\ y = 5,\ z \approx 17.32$

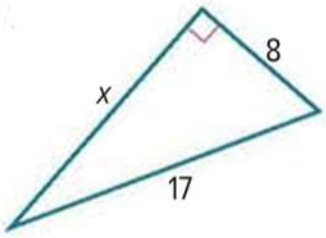
مساحة الحل • Working space

Q	LEARNING OUTCOME	REVEAL (ENGLISH)	PAGE
Q16	The Pythagorean Theorem and Pythagorean triples	(7-12), (20-22)	171-172

Use a Pythagorean triple to find x, or classify each triangle by its sides.

103 Book #7

Use a Pythagorean triple to find x.

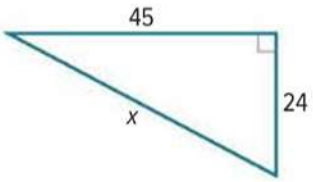


(A) $x = 15$ (B) $x = 9$ (C) $x = 12$ (D) $x = 25$

مساحة الحل • Working space

104 Book #8

Use a Pythagorean triple to find *x*.

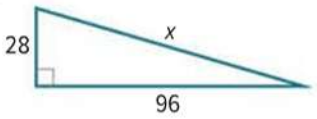


(A) $x = 21$ (B) $x = 45$ (C) $x = 69$ (D) $x = 51$

مساحة الحل • Working space

105 Book #9

Use a Pythagorean triple to find *x*.

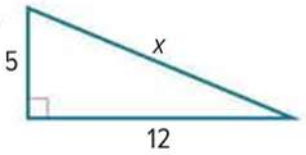


(A) $x = 96$ (B) $x = 124$ (C) $x = 100$ (D) $x = 68$

مساحة الحل • Working space

106 Book #10

Use a Pythagorean triple to find *x*.



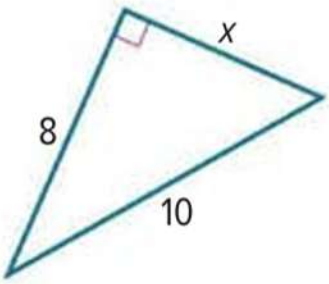
(A) $x = 17$ (B) $x = 15$ (C) $x = 13$ (D) $x = 7$

مساحة الحل • Working space

Mr. Karam Asaad 0505308082

107 Book #11

Use a Pythagorean triple to find *x*.



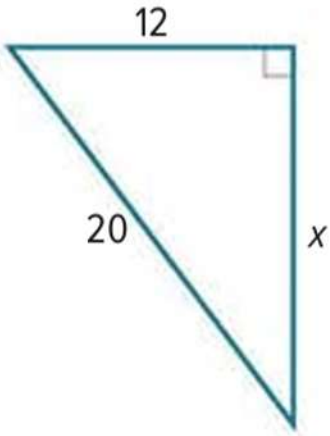
Mr. Karam Asaad
0505308082

(A) $x = 6$ (B) $x = 12.8$ (C) $x = 18$ (D) $x = 2$

مساحة الحل • Working space

108 Book #12

Use a Pythagorean triple to find *x*.



Mr. Karam Asaad
0505308082

(A) $x = 23.3$ (B) $x = 16$ (C) $x = 32$ (D) $x = 8$

مساحة الحل • Working space

Mr. Karam Asaad
0505308082

109 Book #20

Can $\sqrt{5},\ \sqrt{12},\ \sqrt{13}$ be the side lengths of a triangle? If so, classify it.

(A) Yes; obtuse triangle

(B) Yes; acute triangle

(C) No; these cannot be the sides of a triangle

(D) Yes; right triangle

مساحة الحل • Working space

110 Book #21

Can $2,\ \sqrt{8},\ \sqrt{12}$ be the side lengths of a triangle? If so, classify it.

(A) Yes; obtuse triangle

(B) No; these cannot be the sides of a triangle

(C) Yes; right triangle

(D) Yes; acute triangle

مساحة الحل • Working space

Mr. Karam Asaad 0505308082

111

Book #22

Can $9,\ 40,\ 41$ be the side lengths of a triangle? If so, classify it.

(A) Yes; right triangle

(B) No; these cannot be the sides of a triangle

(C) Yes; acute triangle

(D) Yes; obtuse triangle

مساحة الحل • Working space

Mr. Karam Asaad
0505308082

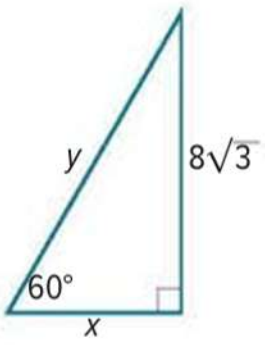
Q	LEARNING OUTCOME	REVEAL (ENGLISH)	PAGE
Q17	Special right triangles: 45°-45°-90° and 30°-60°-90°	(19-25), (33-38)	184-185

Find the values of *x* and *y*.

112

Book #19

Find *x* and *y*.



(A) $x = 16,\ y = 8$

(B) $x = 8\sqrt{3},\ y = 16$

(C) $x = 8,\ y = 16$

(D) $x = 8,\ y = 8\sqrt{2}$

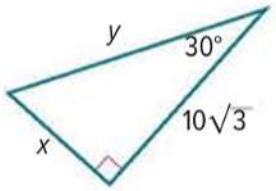
مساحة الحل • Working space

Mr. Karam Asaad 0505308082

113

Book #20

Find x and y.



Mr. Karam Asaad
0505308082

(A) $x = 10,\ y = 10\sqrt{3}$

(B) $x = 10\sqrt{3},\ y = 20$

(C) $x = 20,\ y = 10$

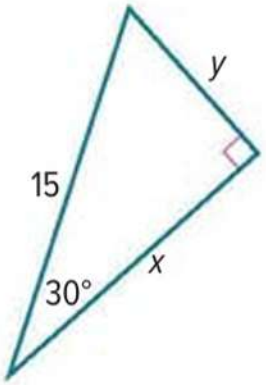
(D) $x = 10,\ y = 20$

مساحة الحل • Working space

114

Book #21

Find x and y.



(A) $x = \frac{15\sqrt{3}}{2},\ y = 15$

(B) $x = \frac{15\sqrt{3}}{2},\ y = 7.5$

(C) $x = 15\sqrt{3},\ y = 7.5$

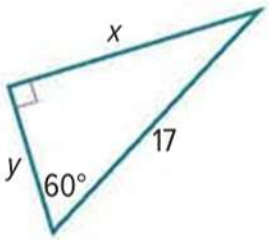
(D) $x = 7.5,\ y = \frac{15\sqrt{3}}{2}$

مساحة الحل • Working space

115

Book #22

Find x and y.



(A) $x = \frac{17\sqrt{3}}{2},\ y = 17$

(B) $x = \frac{17\sqrt{3}}{2},\ y = 8.5$

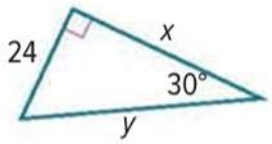
(C) $x = 17\sqrt{3},\ y = 8.5$

(D) $x = 8.5,\ y = \frac{17\sqrt{3}}{2}$

مساحة الحل • Working space

116 Book #23

Find x and y.



Mr. Karam Asaad
0505308082

(A) $x = 24\sqrt{3},\ y = 48$

(B) $x = 48,\ y = 24\sqrt{3}$

(C) $x = 12\sqrt{3},\ y = 24$

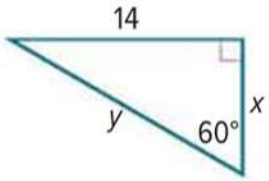
(D) $x = 24\sqrt{2},\ y = 48$

مساحة الحل • Working space

Mr. Karam Asaad
0505308082

117 Book #24

Find x and y.



Mr. Karam Asaad
0505308082

(A) $x = \frac{14\sqrt{3}}{3},\ y = \frac{28\sqrt{3}}{3}$

(B) $x = 14\sqrt{3},\ y = 28\sqrt{3}$

(C) $x = 7\sqrt{3},\ y = 14$

(D) $x = \frac{28\sqrt{3}}{3},\ y = \frac{14\sqrt{3}}{3}$

مساحة الحل • Working space

Mr. Karam Asaad
0505308082

Mr. Karam Asaad
0505308082

118 Book #25

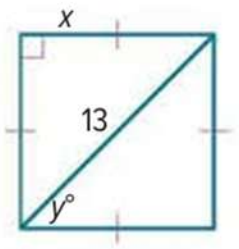
ESCALATORS A 40-foot-long escalator rises from the first floor to the second floor of a shopping mall. The escalator makes a 30° angle with the horizontal. How high above the first floor is the second floor?

(A) 80 ft (B) 20 ft (C) $40\sqrt{3}$ ft (D) $20\sqrt{3}$ ft

مساحة الحل • Working space

119 Book #33

Find x and y. (The figure is a square with diagonal 13.)



(A) $x = \frac{13\sqrt{2}}{2},\ y = 90$

(B) $x = \frac{13\sqrt{2}}{2} \approx 9.19,\ y = 45$

(C) $x = 13\sqrt{2},\ y = 45$

(D) $x = 6.5,\ y = 45$

مساحة الحل • Working space

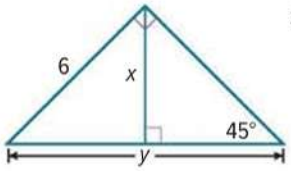
Mr. Karam Asaad 0505308082

120

Book #34

Find x and y. (A 45° angle at the base and the altitude x.)

35.



(A) $x = 3,\ y = 6$

(B) $x = 6\sqrt{2},\ y = 6$

(C) $x = 3\sqrt{2},\ y = 6\sqrt{2}$

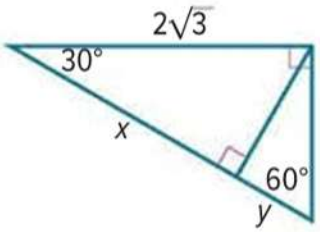
(D) $x = 3\sqrt{2},\ y = 12$

مساحة الحل • Working space

121

Book #35

Find x and y.



(A) $x = 4,\ y = 2$

(B) $x = 3,\ y = 2$

(C) $x = 3,\ y = \sqrt{3}$

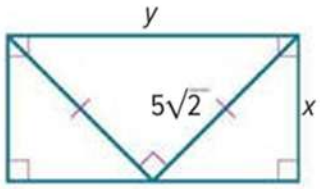
(D) $x = 2\sqrt{3},\ y = 3$

مساحة الحل • Working space

Mr. Karam Asaad 0505308082

122 Book #36

Find x and y. (The triangle inside the rectangle is an isosceles right triangle.)



Mr. Karam Asaad
0505308082

(A) $x = 5\sqrt{2},\ y = 10$

(B) $x = 5,\ y = 10$

(C) $x = 5,\ y = 5\sqrt{2}$

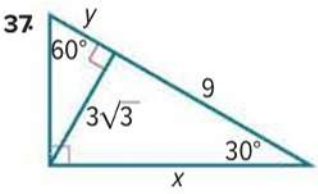
(D) $x = 10,\ y = 5$

مساحة الحل • Working space

Mr. Karam Asaad
0505308082

123 Book #37

Find x and y.



Mr. Karam Asaad
0505308082

(A) $x = 3\sqrt{3},\ y = 3$

(B) $x = 6\sqrt{3},\ y = 6$

(C) $x = 6\sqrt{3},\ y = 3$

(D) $x = 9,\ y = 3\sqrt{3}$

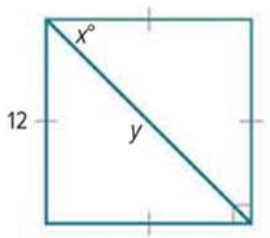
مساحة الحل • Working space

Mr. Karam Asaad
0505308082

124

Book #38

Find x and y. (The figure is a square with side 12.)



Mr. Karam Asaad
0505308082

(A) $x = 45,\ y = 12$

(B) $x = 90,\ y = 12\sqrt{2}$

(C) $x = 45,\ y = 24$

(D) $x = 45,\ y = 12\sqrt{2}$

مساحة الحل • Working space

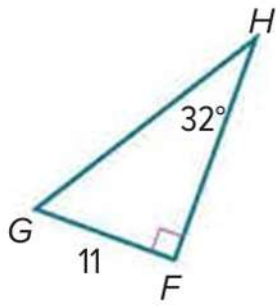
Mr. Karam Asaad
0505308082

Q	LEARNING OUTCOME	REVEAL (ENGLISH)	PAGE
Q18	Solve right triangles using trigonometric ratios	(22-27), (30-32)	192-193

Solve each right triangle. Round side measures to the nearest tenth and angle measures to the nearest degree.

125 Book #22

Solve the right triangle.



(A) $FH \approx 17.6,\ GH \approx 20.8,\ m\angle G = 32°$

(B) $FH \approx 5.8,\ GH \approx 20.8,\ m\angle G = 58°$

(C) $FH \approx 6.9,\ GH \approx 13.0,\ m\angle G = 32°$

(D) $FH \approx 17.6,\ GH \approx 20.8,\ m\angle G = 58°$

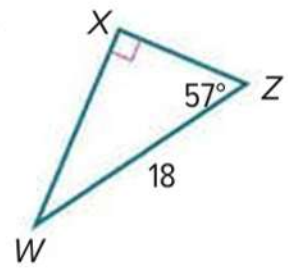
مساحة الحل • Working space

Mr. Karam Asaad 0505308082

126

Book #23

Solve the right triangle.



(A) $XZ \approx 11.7,\ XW \approx 13.7,\ m\angle W = 33°$

(B) $XZ \approx 9.8,\ XW \approx 15.1,\ m\angle W = 57°$

(C) $XZ \approx 9.8,\ XW \approx 15.1,\ m\angle W = 33°$

(D) $XZ \approx 15.1,\ XW \approx 9.8,\ m\angle W = 33°$

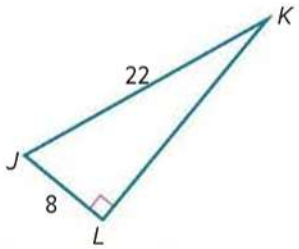
مساحة الحل • Working space

Mr. Karam Asaad
0505308082

127

Book #24

Solve the right triangle.



Mr. Karam Asaad
0505308082

(A) $m\angle J \approx 69°,\ m\angle K \approx 21°,\ KL \approx 23.4$

(B) $m\angle J \approx 69°,\ m\angle K \approx 21°,\ KL \approx 20.5$

(C) $m\angle J \approx 45°,\ m\angle K \approx 45°,\ KL \approx 20.5$

(D) $m\angle J \approx 21°,\ m\angle K \approx 69°,\ KL \approx 20.5$

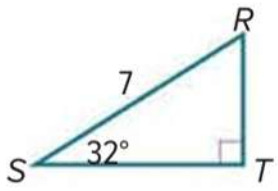
مساحة الحل • Working space

Mr. Karam Asaad
0505308082

128

Book #25

Solve the right triangle.



Mr. Karam Asaad
0505308082

(A) $ST \approx 5.9,\ RT \approx 3.7,\ m\angle R = 32°$

(B) $ST \approx 5.9,\ RT \approx 3.7,\ m\angle R = 58°$

(C) $ST \approx 3.7,\ RT \approx 5.9,\ m\angle R = 58°$

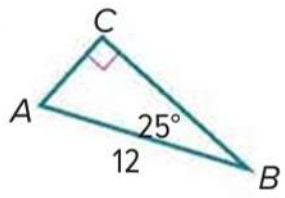
(D) $ST \approx 8.3,\ RT \approx 4.4,\ m\angle R = 58°$

مساحة الحل • Working space

129

Book #26

Solve the right triangle.



Mr. Karam Asaad
0505308082

(A) $AC \approx 5.1,\ BC \approx 10.9,\ m\angle A = 25°$

(B) $AC \approx 5.6,\ BC \approx 10.6,\ m\angle A = 65°$

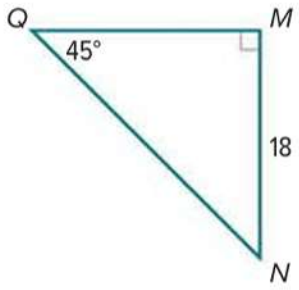
(C) $AC \approx 10.9,\ BC \approx 5.1,\ m\angle A = 65°$

(D) $AC \approx 5.1,\ BC \approx 10.9,\ m\angle A = 65°$

مساحة الحل • Working space

130 Book #27

Solve the right triangle.



(A) $QM = 18,\ QN \approx 25.5,\ m\angle N = 90°$

(B) $QM = 18,\ QN \approx 25.5,\ m\angle N = 45°$

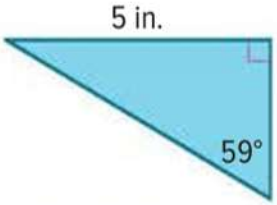
(C) $QM \approx 25.5,\ QN = 18,\ m\angle N = 45°$

(D) $QM = 18,\ QN = 18,\ m\angle N = 45°$

مساحة الحل • Working space

131 Book #30

Find the perimeter P and the area A of the triangle (nearest hundredth).



(A) $P \approx 13.84$ in, $A \approx 7.51$ in^2

(B) $P \approx 16.0$ in, $A \approx 8.32$ in^2

(C) $P \approx 13.84$ in, $A \approx 15.02$ in^2

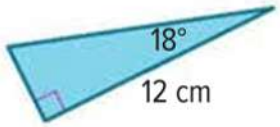
(D) $P \approx 8.84$ in, $A \approx 7.51$ in^2

مساحة الحل • Working space

Mr. Karam Asaad 0505308082

132 Book #31

Find the perimeter P and the area A of the triangle (nearest hundredth).



Mr. Karam Asaad
0505308082

(A) $P \approx 28.52$ cm, $A \approx 23.39$ cm^2

(B) $P \approx 16.5$ cm, $A \approx 23.39$ cm^2

(C) $P \approx 28.52$ cm, $A \approx 46.79$ cm^2

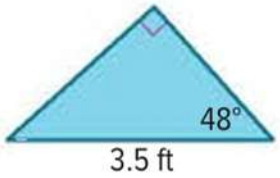
(D) $P \approx 30.1$ cm, $A \approx 25.4$ cm^2

مساحة الحل • Working space

Mr. Karam Asaad
0505308082

133 Book #32

Find the perimeter P and the area A of the triangle (nearest hundredth).



Mr. Karam Asaad
0505308082

(A) $P \approx 9.2$ ft, $A \approx 3.9$ ft^2

(B) $P \approx 8.44$ ft, $A \approx 3.05$ ft^2

(C) $P \approx 8.44$ ft, $A \approx 6.09$ ft^2

(D) $P \approx 4.94$ ft, $A \approx 3.05$ ft^2

مساحة الحل • Working space

Mr. Karam Asaad
0505308082

Q	LEARNING OUTCOME	REVEAL (ENGLISH)	PAGE
Q19	Solve problems using angles of elevation and depression	(1-7)	199

Solve each problem.

134 Book #1

LIGHTHOUSES Sailors on a ship at sea spot the light from a lighthouse at an angle of elevation of $25°$. The light of the lighthouse is 30 meters above sea level. How far from the shore is the ship? Round your answer to the nearest meter.

(A) 71 m (B) 33 m (C) 14 m (D) 64 m

مساحة الحل • Working space

135 Book #2

WATER TOWERS A student can see a water tower from the edge of a soccer field. The edge of the field is about 110 feet from the water tower, and the water tower stands at a height of 32.5 feet. What is the angle of elevation if the eye level of the student viewing the tower is 6 feet above the ground? Round to the nearest tenth.

(A) $13.5°$ (B) $16.5°$ (C) $73.5°$ (D) $16.4°$

مساحة الحل • Working space

Mr. Karam Asaad 0505308082

136 Book #3

CONSTRUCTION A roofer props a ladder against a wall so the top of the ladder just reaches a 30-foot roof that needs repair. If the angle of elevation from the bottom of the ladder to the roof is $55°$, how far is the ladder from the base of the wall? Round to the nearest foot.

(A) 37 ft (B) 17 ft (C) 43 ft (D) 21 ft

مساحة الحل • Working space

137 Book #4

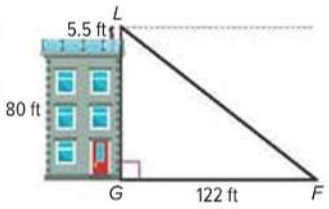
MOUNTAIN BIKING Nabuko is standing about 60 meters from the base of a canyon cliff, and the natural arch bridges are about 100 meters up the canyon wall. If her line of sight is 5 meters above the ground, what is the angle of elevation to the top of the bridges? Round to the nearest tenth of a degree.

(A) $31.0°$ (B) $57.7°$ (C) $58.9°$ (D) $59.0°$

مساحة الحل • Working space

138 Book #5

ROOFTOP Lucia is 5.5 feet tall. She is standing on the roof of a building that is 80 feet tall. She spots a fountain at ground level that she knows to be 122 feet away from the base of the building. What is the measure of the angle of depression formed by Lucia's horizontal line of sight and her line of sight to the fountain? Round to the nearest degree.

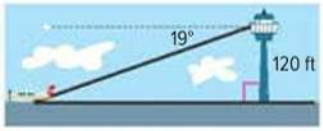


(A) $35°$ (B) $55°$ (C) $33°$ (D) $41°$

مساحة الحل • Working space

139 Book #6

AIR TRAFFIC From the top of the 120-foot-high tower, an air traffic controller observes an airplane on the runway at an angle of depression of $19°$. How far from the base of the tower is the airplane? Round to the nearest tenth of a foot.



(A) 126.9 ft (B) 368.6 ft (C) 348.5 ft (D) 40.7 ft

مساحة الحل • Working space

140 Book #7

AVIATION Due to a storm, a pilot flying at an altitude of 528 feet has to land. If he has a horizontal distance of 2000 feet until he reaches the landing strip, what angle of depression should he use to land? Round to the nearest tenth of a degree.

(A) $14.2°$ (B) $14.8°$ (C) $15.3°$ (D) $75.2°$

مساحة الحل • Working space

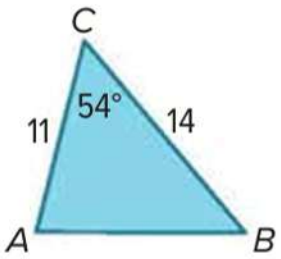
Mr. Karam Asaad 0505308082

Q	LEARNING OUTCOME	REVEAL (ENGLISH)	PAGE
Q20	Find the area of a triangle using the sine of the included angle	(13-21)	200-201

Use trigonometry to find the area of $\triangle ABC$ to the nearest tenth.

141 Book #13

Find the area of the triangle (nearest tenth).

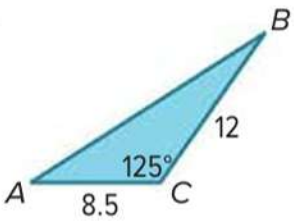


(A) 62.3 (B) 123.5 (C) 90.2 (D) 31.1

مساحة الحل • Working space

142 Book #14

Find the area of the triangle (nearest tenth).



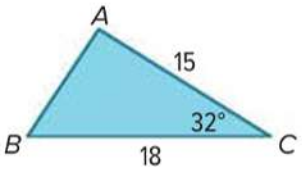
(A) 20.9 (B) 83.7 (C) 41.8 (D) 51.0

مساحة الحل • Working space

Mr. Karam Asaad 0505308082

143 Book #15

Find the area of the triangle (nearest tenth).

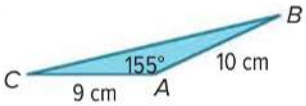


(A) 135 (B) 36.0 (C) 71.5 (D) 114.4

مساحة الحل • Working space

144 Book #16

Find the area of the triangle (nearest tenth).

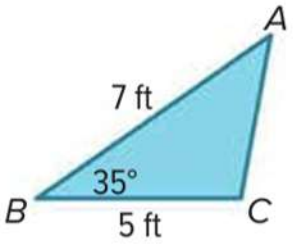


(A) 9.5 (B) 45.0 (C) 38.0 (D) 19.0

مساحة الحل • Working space

145 Book #17

Find the area of the triangle (nearest tenth).



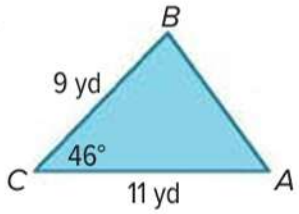
(A) 14.3 (B) 17.5 (C) 5.0 (D) 10.0

مساحة الحل • Working space

Mr. Karam Asaad 0505308082

146 Book #18

Find the area of the triangle (nearest tenth).

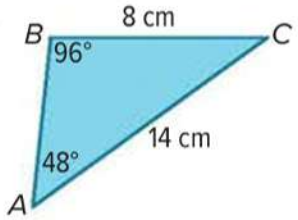


(A) 35.6 (B) 18.0 (C) 71.2 (D) 49.5

مساحة الحل • Working space

147 Book #19

In the figure, $m\angle A = 48°$, $m\angle B = 96°$, $BC = 8$ cm and $AC = 14$ cm. Find the area of $\triangle ABC$.

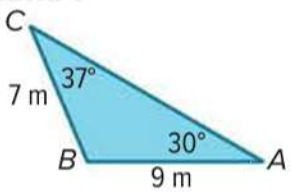


(A) $32.9\ \text{cm}^2$ (B) $16.5\ \text{cm}^2$ (C) $41.7\ \text{cm}^2$ (D) $56.0\ \text{cm}^2$

مساحة الحل • Working space

148 Book #20

In the figure, $m\angle A = 30°$, $m\angle C = 37°$, $CB = 7$ m and $AB = 9$ m. Find the area of $\triangle ABC$.



(A) $19.0\ \text{m}^2$ (B) $31.5\ \text{m}^2$ (C) $29.0\ \text{m}^2$ (D) $37.9\ \text{m}^2$

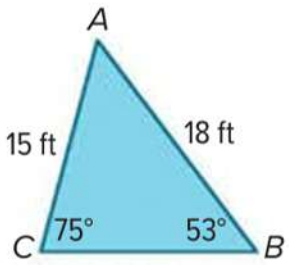
مساحة الحل • Working space

Mr. Karam Asaad 0505308082

149

Book #21

In the figure, $m\angle C = 75°$, $m\angle B = 53°$, $CA = 15$ ft and $AB = 18$ ft. Find the area of $\triangle ABC$.



(A) 81.4 ft^2 (B) 106.4 ft^2 (C) 130.4 ft^2 (D) 135 ft^2

مساحة الحل • Working space

Mr. Karam Asaad
0505308082

0505308082

Q	LEARNING OUTCOME	REVEAL (ENGLISH)	PAGE
Q21	Factor special products: difference of two squares and perfect square trinomials	(35-41), (51-56)	680-681

Mr. Karam Asaad 0505308082

Show every step.

1 Book #35–37

Factor each polynomial completely, if possible. If the polynomial cannot be factored using integers, write *prime*.

35. $8x^2 - 72p^2$ **36.** $20q^2 - 5r^2$ **37.** $32a^2 - 50b^2$

مساحة الحل • Working space

Mr. Karam Asaad 0505308082

2 Book #38–40

38. $16b^2 - 100$ **39.** $49x^2 - 64y^2$ **40.** $3n^4 - 42n^3 + 147n^2$

مساحة الحل • Working space

Mr. Karam Asaad 0505308082

3 Book #41

41. $8m^3 - 24m^2 + 18m$

مساحة الحل • Working space

4 Book #51–53

Determine whether each trinomial is a perfect square trinomial. Write *yes* or *no*. If so, factor it.

51. $9z^2 - 6z + 1$ **52.** $36x^2 - 60x + 25$ **53.** $49r^2 + 14r + 4$

مساحة الحل • Working space

5 Book #54–56

54. $a^2 + 14a + 49$ **55.** $t^2 - 18t + 81$ **56.** $4c^2 + 2cd + d^2$

مساحة الحل • Working space

Mr. Karam Asaad 0505308082

Q	LEARNING OUTCOME	REVEAL (ENGLISH)	PAGE
Q22	Angle measures of regular and irregular polygons	(9-18)	64

Show every step.

6 Book #9–11

The measure of an interior angle of a regular polygon is given. Find the number of sides in the polygon.

9. $144°$ **10.** $156°$ **11.** $160°$

مساحة الحل • Working space

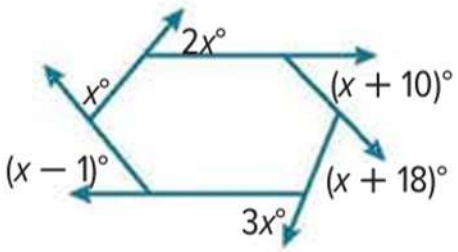
7 Book #12–14

12. $108°$ **13.** $120°$ **14.** $150°$

مساحة الحل • Working space

8 Book #15

Find the value of x in the diagram.

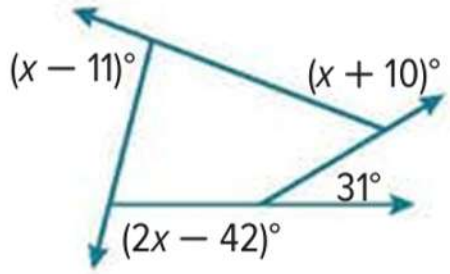


مساحة الحل • Working space

Mr. Karam Asaad 0505308082

9 Book #16

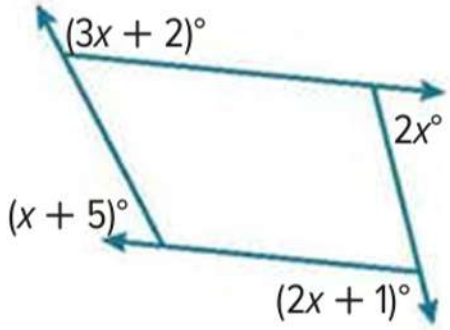
Find the value of x in the diagram.



مساحة الحل • Working space

10 Book #17

Find the value of x in the diagram.

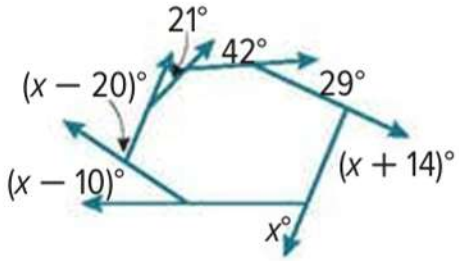


مساحة الحل • Working space

Mr. Karam Asaad
0505308082

11 Book #18

Find the value of x in the diagram.



Mr. Karam Asaad
0505308082

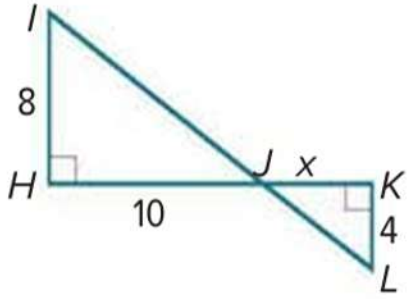
مساحة الحل • Working space

Q	LEARNING OUTCOME	REVEAL (ENGLISH)	PAGE
Q23	Identify similar triangles and solve for the unknown	(5-11)	139

Identify the similar triangles. Then find the value of x.

12 Book #5

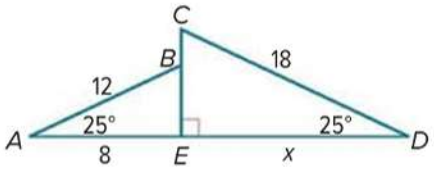
Identify the similar triangles, then find x.



مساحة الحل • Working space

13 Book #6

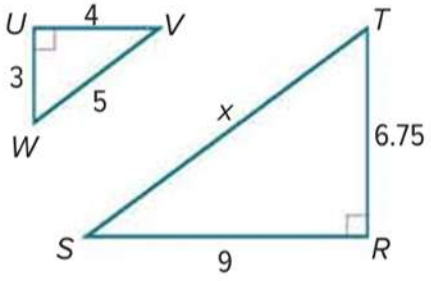
Identify the similar triangles, then find *x*.



مساحة الحل • Working space

14 Book #7

Identify the similar triangles, then find *x*.

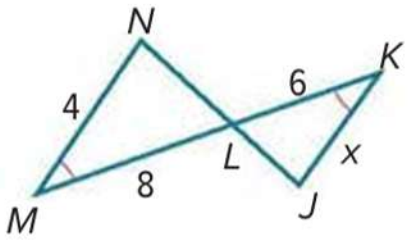


مساحة الحل • Working space

Mr. Karam Asaad
0505308082

15 Book #8

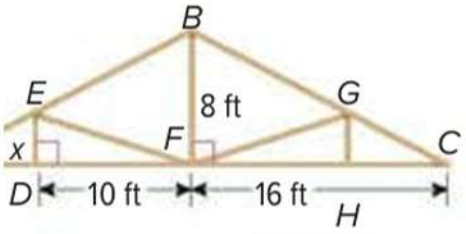
Identify the similar triangles, then find *x*.



مساحة الحل • Working space

16 Book #9

ROOFING The skeleton of a roof is shown. Find the value of *x* such that triangles *DEF* and *FBC* in the outline of the roof are similar.



مساحة الحل • Working space

Mr. Karam Asaad
0505308082

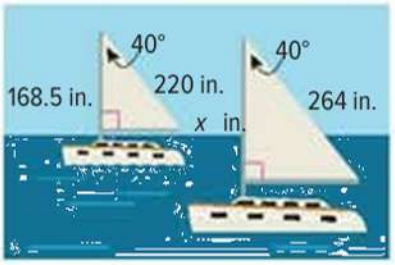
17 Book #10

RADIO A radio tower casts an 8-foot-long shadow at the same time that a vertical yardstick casts a shadow one half inch long. If the triangles formed by the objects and their shadows are similar, how tall is the radio tower?

مساحة الحل • Working space

18 Book #11

SAILING The two sailboats shown are participating in a regatta. If the sails are similar, what is the value of x?



مساحة الحل • Working space

Mr. Karam Asaad
0505308082

Q	LEARNING OUTCOME	REVEAL (ENGLISH)	PAGE
Q24	Distance and midpoint formulas in three dimensions	(13-24)	177-178

Show every step.

19 Book #13–15

Determine the coordinates of the midpoint *M* of the segment joining each pair of points.

13. $K(-2, -4, -4)$ and $L(4, 2, 0)$

14. $W(-1, -3, -6)$ and $Z(-1, 5, 10)$

15. $R(3, 3, 4)$ and $V(5, 4, 13)$

مساحة الحل • Working space

20 Book #16–18

16. $A(4, 6, -8)$ and $B(0, 0, 0)$

17. $C(8, 7, 11)$ and $D(2, 1, 8)$

18. $T(-1, -7, 9)$ and $U(5, -1, -6)$

مساحة الحل • Working space

Mr. Karam Asaad 0505308082

21 Book #19–20

Determine the distance between each pair of points. Then determine the coordinates of the midpoint *M* of the segment joining the pair of points.

19. $P(-5, -2, -1)$ and $Q(-1, 0, 3)$

20. $J(1, 1, 1)$ and $K(-1, -1, -1)$

مساحة الحل • Working space

Mr. Karam Asaad
0505308082

22 Book #21–22

21. $F\left(\frac{3}{5}, 0, \frac{4}{5}\right)$ and $G(0, 3, 0)$

22. $G(1, -1, 6)$ and $H\left(\frac{1}{5}, -\frac{2}{5}, 2\right)$

مساحة الحل • Working space

Mr. Karam Asaad
0505308082

23 Book #23–24

23. $B(\sqrt{3}, 2, 2\sqrt{2})$ and $C(-2\sqrt{3}, 4, 4\sqrt{2})$

24. $S(6\sqrt{3}, 4, 4\sqrt{2})$ and $T(4\sqrt{3}, 5, \sqrt{2})$

مساحة الحل • Working space

Mr. Karam Asaad
0505308082

Q	LEARNING OUTCOME	REVEAL (ENGLISH)	PAGE
Q25	Law of Sines: the ambiguous case	(15-26)	208

Determine whether each triangle has *no solution*, *one solution*, or *two solutions*. Then solve the triangle. Round side lengths to the nearest tenth and angle measures to the nearest degree.

24 Book #15–16

15. $m\angle A = 50°,\ a = 34,\ b = 40$

16. $m\angle A = 24°,\ a = 3,\ b = 8$

مساحة الحل • Working space

Mr. Karam Asaad
0505308082

25

Book #17–18

17. $m\angle A = 125°,\ a = 22,\ b = 15$

18. $m\angle A = 30°,\ a = 1,\ b = 4$

مساحة الحل • Working space

26

Book #19–20

19. $m\angle A = 30°,\ a = 2,\ b = 4$

20. $m\angle A = 30°,\ a = 3,\ b = 4$

مساحة الحل • Working space

Mr. Karam Asaad
0505308082

27

Book #21–22

21. $m\angle A = 38°,\ a = 10,\ b = 9$

22. $m\angle A = 78°,\ a = 8,\ b = 5$

مساحة الحل • Working space

28

Book #23–24

23. $m\angle A = 133°,\ a = 9,\ b = 7$

24. $m\angle A = 127°,\ a = 2,\ b = 6$

مساحة الحل • Working space

Mr. Karam Asaad
0505308082

29

Book #25–26

25. $m\angle A = 109°,\ a = 24,\ b = 13$

26. $m\angle A = 48°,\ a = 11,\ b = 16$

مساحة الحل • Working space

Mr. Karam Asaad
0505308082