

ملزمة شاملة وفق الهيكل الوزاري الجديد منهج ريفيل



تم تحميل هذا الملف من موقع المناهج الإماراتية

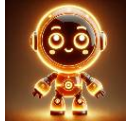
موقع المناهج ⇨ المناهج الإماراتية ⇨ الصف التاسع العام ⇨ رياضيات ⇨ الفصل الأول ⇨ ملفات متنوعة ⇨ الملف

تاريخ إضافة الملف على موقع المناهج: 2025-10-24 12:03:32

ملفات اكتب للمعلم اكتب 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

المزيد من مادة
رياضيات:

التواصل الاجتماعي بحسب الصف التاسع العام



صفحة المناهج
الإماراتية على
فيسبوك

الرياضيات

اللغة الانجليزية

اللغة العربية

التربية الاسلامية

المواد على تلغرام

المزيد من الملفات بحسب الصف التاسع العام والمادة رياضيات في الفصل الأول

تجميعية أسئلة شاملة وفق الهيكل الوزاري الجديد منهج ريفيل

1

نموذج إجابة تجميعية شاملة وفق كامل الهيكل الوزاري منهج ريفيل

2

تجميعية شاملة وفق كامل الهيكل الوزاري منهج ريفيل بدون الحل

3

ملزمة تجميعية أسئلة وفق الهيكل الوزاري منهج بريدج بدون الحل

4

تجميعية أسئلة وفق الهيكل الوزاري الجديد منهج ريفيل

5



EOT FOR FINAL EXAM GRADE 9 GENERAL

REVEAL

First semester

Year 2025-2026



"كل خطوة تخطوها تقربك من هدفك".

عمل مشترك بين معلمات من مدارس مختلفة لتبادل الخبرات

<u>AD</u>	<u>School Name</u>	<u>City</u>
AD.2.1	Al Danat School	Al Ain
AD.2.11	Al Resalah Common School	Al Ain
AD.1.4	Salama Bint Bitti School	Abu Dahbi
AD.1.7	Al Khatem school	Abu Dahbi
AD.2.6	Al Mubazarah school	Al Ain
AD.2.9	Al Tomooh School	Al Ain



Academic

Calendar

Term 1



الفصل الدراسي	الشهر	Mo	Tu	We	Th	Fr	Sa	Su
الفصل الدراسي الأول	أغسطس 2025	18	19	20	21	22	23	24
		25	26	27	28	29	30	31
	سبتمبر 2025							
		1	2	3	4	5	6	7
		8	9	10	11	12	13	14
		15	16	17	18	19	20	21
		22	23	24	25	26	27	28
		29	30					
	أكتوبر 2025			1	2	3	4	5
		6	7	8	9	10	11	12
		13	14	15	16	17	18	19
		20	21	22	23	24	25	26
		27	28	29	30	31		
	نوفمبر 2025						1	2
		3	4	5	6	7	8	9
		10	11	12	13	14	15	16
		17	18	19	20	21	22	23
		24	25	26	27	28	29	30
	ديسمبر 2025	1	2	3	4	5	6	7
		8	9	10	11	12	13	14
		15	16	17	18	19	20	21
		22	23	24	25	26	27	28
		29	30	31				
	يناير 2026				1	2	3	4

التاريخ	بيان الإجراء
18 أغسطس 2025	بداية دوام للكادر الإداري والتعليمي
18 - 22 أغسطس 2025	التدريب التخصصي للكادر الإداري والتعليمي 1
25 أغسطس 2025	بداية العام الدراسي للطلبة
4 سبتمبر 2025	إجازة المولد النبوي
15 - 19 سبتمبر 2025	الاختبار التشخيصي
13 - 19 أكتوبر 2025	إجازة منتصف الفصل للطلبة
13 - 15 أكتوبر 2025	التدريب التخصصي للكادر الإداري والتعليمي 2
16 - 19 أكتوبر 2025	إجازة منتصف الفصل للكادر الإداري والتعليمي
17 - 19 نوفمبر 2025	الاختبار التجريبي
20 - 28 نوفمبر 2025	اختبارات نهاية الفصل الدراسي
2 - 3 ديسمبر 2025	إجازة اليوم الوطني
4 - 5 ديسمبر 2025	استئناف اختبارات نهاية الفصل الدراسي
8 ديسمبر - 4 يناير 2026	إجازة الشتاء للطلبة
8 - 12 ديسمبر 2026	التدريب التخصصي للكادر الإداري والتعليمي 3
8 - 12 ديسمبر 2026	الاختبارات التعويضية للفصل الدراسي الأول
15 ديسمبر - 4 يناير 2026	إجازة الشتاء للكادر الإداري والتعليمي

مواعيد الأجددة الأكاديمية

- بداية العام للكادر الإداري و التعليمي
- بداية العام الدراسي للطلبة
- الاختبار التشخيصي
- اختبارات نهاية الفصل الدراسي

عطل وإجازات رسمية

- إجازة منتصف الفصل للطلبة
- المولد النبوي
- اليوم الوطني
- إجازة الشتاء للطلبة
- رأس السنة الميلادية



Calendar

[illegible]

1	Solve equations by using addition and subtraction	(1-15)	81

Solve the following equation:		Solution:
1) $v - 9 = 14$		
a) $v = 5$	b) $v = 16$	
c) $v = 23$	d) $v = 22$	

Solve the following equation: 2) $44 = t - 72$		Solution: _____ _____ _____ _____ _____
a) $t = 108$	b) $t = 116$	
c) $t = 11$	d) $t = 16$	

"أنت قادر على إنجاز أمور عظيمة، آمن بنفسك!"

1	Solve equations by using addition and subtraction	(1-15)	81

Solve the following equation: 3) $-61 = d + (-18)$		Solution:
a) $d = -43$	b) $d = 46$	
c) $d = -79$	d) $d = 22$	

Solve the following equation: 4) $18 + z = 40$		Solution:
a) $t = -22$	b) $z = 22$	
c) $t = 58$	d) $t = 16$	

1	Solve equations by using addition and subtraction	(1-15)	81

Solve the following equation: 5) $-4a = 48$		Solution:
a) $a = -12$	b) $a = 12$	
c) $a = 183$	d) $a = 22$	

Solve the following equation: 6) $12t = -132$		Solution:
a) $t = 110$	b) $t = 11$	
c) $t = -110$	d) $t = -11$	

1	Solve equations by using addition and subtraction	(1-15)	81

Solve the following equation: 7) $18 - (-f) = 91$		Solution: _____ _____ _____ _____
a) $f = 109$	b) $f = 73$	
c) $f = -109$	d) $f = -73$	

Solve the following equation: 8) $-16 - (-t) = -45$		Solution: _____ _____ _____ _____
a) $t = 61$	b) $t = 29$	
c) $t = -61$	d) $t = -29$	

1	Solve equations by using addition and subtraction	(1-15)	81

Solve the following equation:

9) $\frac{1}{3}v = -5$

a) $v = 5$

b) $v = 16$

c) $v = -15$

d) $v = 22$

Solution:

Solve the following equation:

10) $\frac{u}{8} = -4$

a) $u = 32$

b) $u = -32$

c) $u = 2$

d) $u = -2$

Solution:

1	Solve equations by using addition and subtraction	(1-15)	81

Solve the following equation: 13) $\frac{3}{4} = w + \frac{2}{5}$		Solution: 	
a) $w = \frac{7}{20}$	b) $w = -\frac{7}{20}$		
c) $w = 23$	d) $w = \frac{20}{7}$		

Solve the following equation: 14) $-\frac{1}{2} + a = \frac{5}{8}$		Solution: 	
a) $a = -1\frac{1}{8}$	b) $a = 1\frac{1}{8}$		
c) $a = \frac{1}{8}$	d) $a = 8$		

1	Solve equations by using addition and subtraction	(1-15)	81

Solve the following equation:		Solution:
15) $-\frac{t}{7} = \frac{1}{15}$		
a) $t = -\frac{7}{15}$	b) $t = -\frac{15}{7}$	
c) $t = \frac{7}{15}$	d) $t = -15$	

2	Solve equations involving more than one operation	(1-12)	88
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Use property of equality to solve the following equation: 1) $3t + 7 = -8$		Solution:
a) $t = -5$	b) $t = \frac{1}{3}$	
c) $t = 5$	d) $t = -\frac{1}{3}$	

Use property of equality to solve the following equation: 2) $8 = 16 + 8n$		Solution:
a) $n = 1$	b) $n = 3$	
c) $n = -1$	d) $n = -3$	

"لا تتردد في طرح الأسئلة، فالمعرفة هي طريقك للنجاح."

2	Solve equations involving more than one operation	(1-12)	88

Use property of equality to solve the following equation: 3) $-34 = 6m - 4$		Solution: _____ _____ _____ _____ _____
a) $m = 5$	b) $m = -5$	
c) $m = 13$	d) $m = 25$	

Use property of equality to solve the following equation: 4) $9x + 27 = -72$		Solution: _____ _____ _____ _____ _____
a) $x = 11$	b) $x = 5$	
c) $x = -11$	d) $x = -5$	

2	Solve equations involving more than one operation	(1-12)	88

Use property of equality to solve the following equation:

$$5) \frac{y}{5} - 6 = 8$$

a) $v = 5$

b) $v = 16$

c) $v = 23$

d) $y = 70$

Solution:

Use property of equality to solve the following equation:

$$6) \frac{f}{-7} - 8 = 2$$

a) $f = -70$

b) $f = 10$

c) $f = 70$

d) $f = -10$

Solution:

2	Solve equations involving more than one operation	(1-12)	88

Use property of equality to solve the following equation:		Solution: _____ _____ _____ _____ _____
7) $1 + \frac{r}{9} = 4$		
a) $r = -27$	b) $r = 27$	
c) $r = 20$	d) $r = 45$	

Use property of equality to solve the following equation:		Solution: _____ _____ _____ _____ _____
8) $\frac{k}{3} + 4 = -16$		
a) $k = 36$	b) $k = 60$	
c) $k = -36$	d) $k = -60$	

2	Solve equations involving more than one operation	(1-12)	88

Use property of equality to solve the following equation:

9) $\frac{n-2}{7} = 2$

a) $n = 12$

b) $n = 14$

c) $n = 16$

d) $n = 22$

Solution:

Use property of equality to solve the following equation:

10) $14 = \frac{6+z}{-2}$

a) $z = 20$

b) $z = -34$

c) $z = 34$

d) $z = -22$

Solution:

2	Solve equations involving more than one operation	(1-12)	88

Use property of equality to solve the following equation:

$$11) -11 = \frac{a-5}{6}$$

a) $a = -61$

b) $a = 16$

c) $a = -71$

d) $a = 71$

Solution:

Use property of equality to solve the following equation:

$$12) \frac{22-w}{3} = -7$$

a) $w = -1$

b) $w = 1$

c) $w = -43$

d) $w = 43$

Solution:

3	Use the Distributive Property to simplify expressions	(39-53)	43
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Simplify the following expression, if not possible choose simplified: 39) $13r + 5r$		Solution:
a) $18r^2$	b) $18r + r$	
c) $18r$	d) <i>Simplified</i>	

Simplify the following expression, if not possible choose simplified: 40) $3x^3 - 2x^2$		Solution:
a) $5x^5$	b) x	
c) x^5	d) <i>Simplified</i>	

"أنت نجم في طور التكوين، فلا تتوقف عن إثبات ذلك."

3	Use the Distributive Property to simplify expressions	(39-53)	43
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Simplify the following expression, if not possible choose simplified: 41) $7m + 7 - 5m$		Solution: 	
a) $-2m + 7$	b) $2m + 7$		
c) <i>Simplified</i>	d) $2m^2 + 7$		

Simplify the following expression, if not possible choose simplified: 42) $5z^2 + 3z + 8z^2$		Solution: 	
a) $13z^2 + 3z$	b) $13z^5 + 3z$		
c) $-13z^5 + 3z$	d) <i>Simplified</i>		

3	Use the Distributive Property to simplify expressions	(39-53)	43
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Simplify the following expression, if not possible choose simplified: 43) $7m + 2m + 5p + 4m$		Solution: 	
a) $12m + 5p$	b) $13m + 5p$		
c) <i>Simplified</i>	d) $13m^2 + 5p^2$		

Simplify the following expression, if not possible choose simplified: 44) $6x + 4y + 5x$		Solution: 	
a) $11x^2 + y^2$	b) $11x^2 + 4y^2$		
c) <i>Simplified</i>	d) $11x + 4y$		

3	Use the Distributive Property to simplify expressions	(39-53)	43
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Simplify the following expression, if not possible choose simplified: 45) $3m + 5g + 6g + 11m$		Solution: 	
a) $14m + 8g$	b) $14m + 8g^2$		
c) $14m^2 + 8g$	d) <i>Simplified</i>		

Simplify the following expression, if not possible choose simplified: 46) $4a + 5a^2 + 2a^2 + a^2$		Solution: 	
a) $12a^3$	b) $12a$		
c) $8a^2 + 4a$	d) <i>Simplified</i>		

3	Use the Distributive Property to simplify expressions	(39-53)	43
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Simplify the following expression, if not possible choose simplified: 47) $5k + 3k^3 + 7k + 9k^3$		Solution: 	
a) $24k^5$	b) $12k^3 + 12k$		
c) <i>Simplified</i>	d) $12k^5 + 12k$		

Simplify the following expression, if not possible choose simplified: 48) $6x^2 + 14x - 9x$		Solution: 	
a) $6x^2 + 5x$	b) $6x^2 - 5x$		
c) $6x^4$	d) <i>Simplified</i>		

3	Use the Distributive Property to simplify expressions	(39-53)	43
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Simplify the following expression, if not possible choose simplified: 49) $17g + g$		Solution: 	
a) $18g$	b) $17gg$		
c) $18g^2$	d) <i>Simplified</i>		

Simplify the following expression, if not possible choose simplified: 50) $2x^2 + 6x^2$		Solution: 	
a) $8x^4$	b) $8x^2$		
c) $12x^4$	d) <i>Simplified</i>		

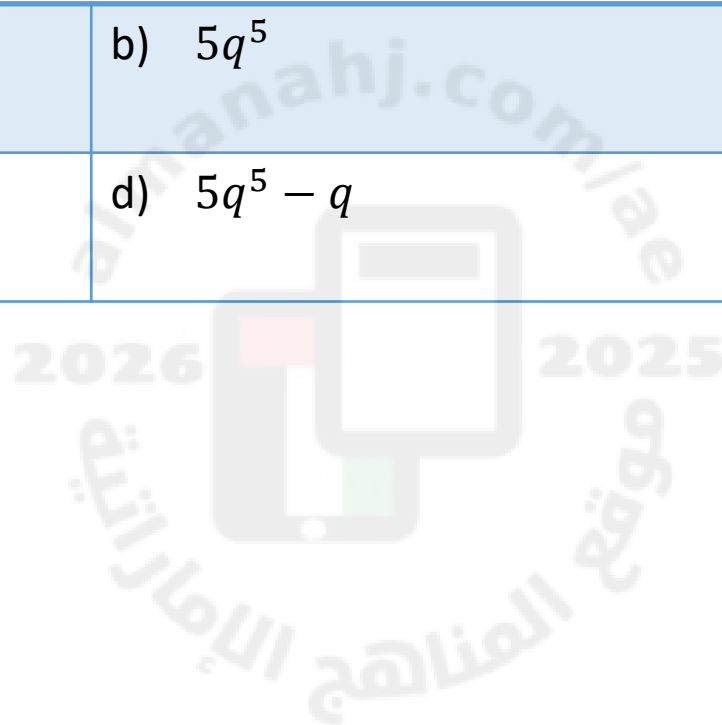
3	Use the Distributive Property to simplify expressions	(39-53)	43
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Simplify the following expression, if not possible choose simplified: 51) $7a^2 - 2a^2$		Solution:
a) $-5a^2$	b) $5a^4$	
c) $5a^2$	d) <i>Simplified</i>	

Simplify the following expression, if not possible choose simplified: 52) $3y^2 - 2y + 9$		Solution:
a) $5y^3 + 9$	b) $y + 9$	
c) <i>Simplified</i>	d) $14y^3$	

3	Use the Distributive Property to simplify expressions	(39-53)	43
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Simplify the following expression, if not possible choose simplified: 53) $3q^2 + q - q^2$		Solution:
a) $2q^2 + q$	b) $5q^5$	
c) <i>Simplified</i>	d) $5q^5 - q$	



4	Prove that equations are identities or have no solution	(25-30)	98

Solve the following equation and choose the correct answer: 25) $-6y - 3 = 3 - 6y$		Solution: 	
a) <i>It has One Solution, $y = 3$</i>	b) <i>No solution</i>		
c) <i>It has One Solution, $y = -3$</i>	d) <i>It has an Identity</i>		

Solve the following equation and choose the correct answer: 26) $\frac{1}{2}(x + 6) = \frac{1}{2}x - 9$		Solution: 	
a) <i>It has One Solution, $x = 3$</i>	b) <i>No solution</i>		
c) <i>It has One Solution, $x = -9$</i>	d) <i>It has an Identity</i>		

"مجهودك يستحق التقدير، فكل خطوة للأمام هي انتصار"

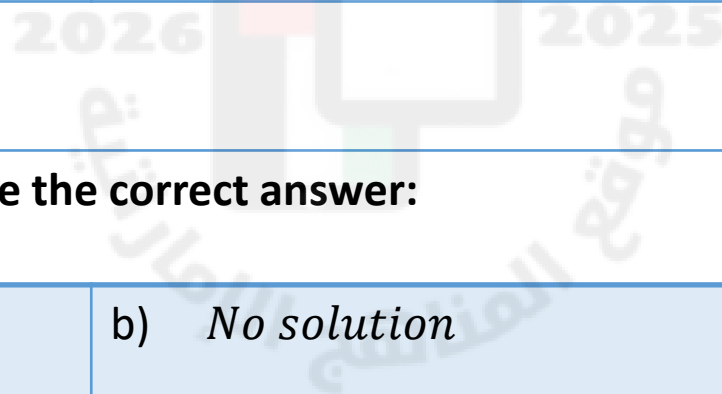
4	Prove that equations are identities or have no solution	(25-30)	98

Solve the following equation and choose the correct answer: 27) $8q + 12 = 4(3 + 2q)$		Solution: 	
a) <i>It has One Solution, $q = 0$</i>	b) <i>No solution</i>		
c) <i>It has One Solution, $q = 12$</i>	d) <i>It has an Identity</i>		

Solve the following equation and choose the correct answer: 28) $21(x + 1) - 6x = 15x + 21$		Solution: 	
a) <i>It has One Solution, $x = 0$</i>	b) <i>No solution</i>		
c) <i>It has One Solution, $x = -6$</i>	d) <i>It has an Identity</i>		

4	Prove that equations are identities or have no solution	(25-30)	98

Solve the following equation and choose the correct answer: 29) $12y + 48 - 4y = 8(y - 6)$		Solution:
a) <i>It has One Solution, $y = 48$</i>	b) <i>No solution</i>	
c) <i>It has One Solution, $y = -48$</i>	d) <i>It has an Identity</i>	



Solve the following equation and choose the correct answer: 30) $8(z + 6) = 4(2z + 12)$		Solution:
a) <i>It has One Solution, $z = 0$</i>	b) <i>No solution</i>	
c) <i>It has One Solution, $z = 24$</i>	d) <i>It has an Identity</i>	

5	Evaluate numerical expressions by using the order of operations	(30-41)	10

Evaluate each expression 30. 7^2		Solution:
a) 14	b) 42	
c) 49	d) 21	

Evaluate each expression 31. 14^3		Solution:
a) 14196	b) 2744	
c) 420	d) 343	

"تفوقك ليس صدفة، بل هو ثمرة اجتهادك وعزيمتك•"

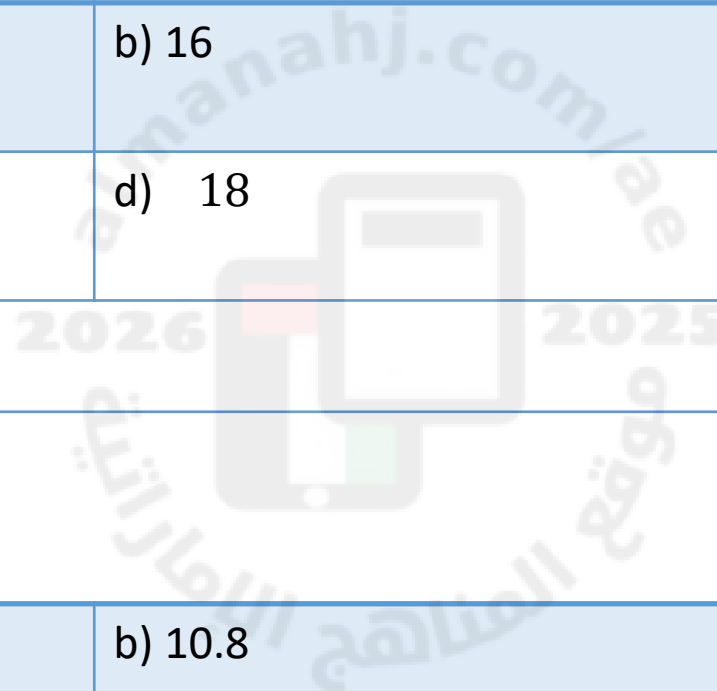
5	Evaluate numerical expressions by using the order of operations	(30-41)	10

Evaluate each expression 32. 2^6		Solution:
a) 12	b) 24	
c) 64	d) 32	

Evaluate each expression 33. $35 - 3 \cdot 8$		Solution:
a) 59	b) 11	
c) 19	d) 61	

5	Evaluate numerical expressions by using the order of operations	(30-41)	10

Evaluate each expression 34. $18 \div 9 + 2 \cdot 6$		Solution:
a) 14	b) 16	
c) 15	d) 18	



Evaluate each expression 35. $10 + 8^3 \div 16$		Solution:
a) 10.5	b) 10.8	
c) 10.25	d) 11	

6	Rewrite linear equations in slope-intercept form	(1-8)	235

Write an equation of a line in slope-intercept form with the given slope and y-intercept:

1) slope: 5, y-intercept: -3

a) $y = 5x - 3$

b) $y = -5x - 3$

c) $y = 5x + 3$

d) $y = -5x + 3$

Solution:

Write an equation of a line in slope-intercept form with the given slope and y-intercept:

2) slope: -2, y-intercept: 7

a) $y = -2x - 7$

b) $y = 2x + 7$

c) $y = 2x - 7$

d) $y = -2x + 7$

Solution:

"أنا فخور جدًا بالمدى الذي وصلت إليه•"

6	Rewrite linear equations in slope-intercept form	(1-8)	235

Write an equation of a line in slope-intercept form with the given slope and y-intercept:

3) slope: -6, y-intercept: -2

a) $y = 6x - 2$

b) $y = -6x + 2$

c) $y = -6x - 2$

d) $y = 6x + 2$

Solution:

Write an equation of a line in slope-intercept form with the given slope and y-intercept:

4) slope: 7, y-intercept: 1

a) $y = 7x - 1$

b) $y = 7x + 1$

c) $y = -7x - 1$

d) $y = -7x + 1$

Solution:

6	Rewrite linear equations in slope-intercept form	(1-8)	235

Write an equation of a line in slope-intercept form with the given slope and y-intercept:

5) slope: 3, y-intercept: 2

a) $y = -3x - 2$

b) $y = -3x + 2$

c) $y = 3x - 2$

d) $y = 3x + 2$

Solution:

Write an equation of a line in slope-intercept form with the given slope and y-intercept:

6) slope: -4, y-intercept: -9

a) $y = 4x - 9$

b) $y = -4x + 9$

c) $y = -4x - 9$

d) $y = 4x + 9$

Solution:

6	Rewrite linear equations in slope-intercept form	(1-8)	235

Write an equation of a line in slope-intercept form with the given slope and y-intercept:

7) slope: 1, y-intercept: -12

a) $y = x - 12$

b) $y = x + 12$

c) $y = -x - 12$

d) $y = -x + 12$

Solution:

Write an equation of a line in slope-intercept form with the given slope and y-intercept:

8) slope: 0, y-intercept: 8

a) $y = 8x$

b) $y = 8$

c) $y = -8x$

d) $y = -8$

Solution:

7	Construct arithmetic sequences	(9-18)	255

Find the common difference of each arithmetic sequence. Then find the next three terms

9) 0.02, 1.08, 2.14, 3.2 ...

a) $d = 1.02$; next three terms:
4.24, 5.26, 6.28

b) $d = 1.08$; next three terms:
4.28, 5.36, 6.44

c) $d = 1.10$; next three terms:
4.30, 5.40, 6.50

d) $d = 1.06$; next three terms:
4.26, 5.32, 6.38

Solution:

Find the common difference of each arithmetic sequence. Then find the next three terms

10) 6, 12, 18, 24, ...

a) $d = 8$; next three terms: 32, 40, 48

b) $d = 4$; next three terms: 28, 32, 36

c) $d = 6$; next three terms: 30, 36, 42

d) $d = 12$; next three terms: 36, 48, 60

Solution:

7	Construct arithmetic sequences	(9-18)	255

Find the common difference of each arithmetic sequence. Then find the next three terms

11) 21, 19, 17, 15, ...

a) $d = -2$; next three terms: 13, 11, 9

b) $d = -4$; next three terms: 11, 7, 3

c) $d = 2$; next three terms: 23, 25, 27

d) $d = -1$; next three terms: 14, 13, 12

Solution:

Find the common difference of each arithmetic sequence. Then find the next three terms

12) $-\frac{1}{2}, 0, \frac{1}{2}, 1, \dots$

a) $d = 1$; next three terms: 2, 3, 4

b) $d = 21$; next three terms: $\frac{3}{2}, 2, \frac{5}{2}$

c) $d = -21$; next three terms: $-1, -1\frac{1}{2}, -2$

d) $d = 23$; next three terms: $2\frac{1}{2}, 4, 5\frac{1}{2}$

Solution:

7	Construct arithmetic sequences	(9-18)	255

Find the common difference of each arithmetic sequence. Then find the next three terms

13) $2\frac{1}{3}, 2\frac{2}{3}, 3, 3\frac{1}{3}, \dots$

a) $d = \frac{1}{3}$; next three terms: $3\frac{2}{3}, 4, 4\frac{1}{3}$

b) $d = \frac{1}{2}$; next three terms: $3\frac{1}{2}, 4, 4\frac{1}{2}$

c) $d = 1$; next three terms: $4\frac{1}{3}, 5\frac{1}{3}, 6\frac{1}{3}$

d) $d = \frac{2}{3}$; next three terms: $4, 4\frac{2}{3}, 5\frac{1}{3}$

Solution:

Find the common difference of each arithmetic sequence. Then find the next three terms

14) $\frac{7}{12}, 1\frac{1}{3}, 2\frac{1}{12}, 2\frac{5}{6}, \dots$

a) $d = \frac{2}{3}$; next three terms: $3\frac{1}{2}, 4\frac{1}{6}, 4\frac{5}{6}$

b) $d = \frac{2}{12}$; next three terms: $2\frac{11}{12}, 3, 3\frac{1}{12}$

c) $d = \frac{3}{4}$; next three terms: $3\frac{7}{12}, 4\frac{1}{3}, 5\frac{1}{12}$

d) $d = \frac{7}{12}$; next three terms: $3\frac{1}{2}, 4\frac{1}{12}, 4\frac{7}{12}$

Solution:

7	Construct arithmetic sequences	(9-18)	255

Find the common difference of each arithmetic sequence. Then find the next three terms

15) 3, 7, 11, 15, ...

a) $d = 2$; next three terms: 17, 19, 21

b) $d = 4$; next three terms: 19, 23, 27

c) $d = 3$; next three terms: 18, 21, 24

d) $d = 5$; next three terms: 20, 25, 30

Solution:

Find the common difference of each arithmetic sequence. Then find the next three terms

16) 22, 19.5, 17, 14.5, ...

a) $d = -3$; next three terms: 11.5, 8.5, 5.5

b) $d = -2$; next three terms:
12.5, 10.5, 8.5

c) $d = -1.5$; next three terms: 13, 11.5, 10

d) $d = -2.5$; next three terms: 12, 9.5, 7

Solution:

7	Construct arithmetic sequences	(9-18)	255

Find the common difference of each arithmetic sequence. Then find the next three terms

17) $-13, -11, -9, -7, \dots$

a) $d=1$; next three terms: $-6, -5, -4$

b) $d=-2$; next three terms: $-9, -11, -13$

c) $d=2$; next three terms: $-5, -3, -1$

d) $d=3$; next three terms: $-4, -1, 2$

Solution:

Find the common difference of each arithmetic sequence. Then find the next three terms

18) $-2, -5, -8, -11, \dots$

a) $d = -2$; next three terms: $-13, -15, -17$

b) $d = -3$; next three terms: $-14, -17, -20$

c) $d = 3$; next three terms: $0, 3, 6$

d) $d = -1$; next three terms: $-12, -13, -14$

Solution:

8	Construct arithmetic sequences	(1-8)	255

Determine whether each sequence is an arithmetic sequence.

1) $-3, 1, 5, 9, \dots$

a) Yes, it is arithmetic because the common difference is 4.

b) Yes, it is arithmetic because the common difference is -4.

c) No, it does not have common difference.

d) Can't be determined

Solution:

Determine whether each sequence is an arithmetic sequence.

2) $\frac{1}{2}, \frac{3}{4}, \frac{5}{8}, \frac{7}{16}, \dots$

a) Yes, it is arithmetic because the common difference is $\frac{1}{4}$.

b) Yes, it is arithmetic because the common difference is 2.

c) No, it does not have common difference.

d) Can't be determined

Solution:

"النجاح هو محصلة اجتهادات صغيرة تتراكم يوماً بعد يوم"

8	Construct arithmetic sequences	(1-8)	255

Determine whether each sequence is an arithmetic sequence.

3) $-10, -7, -4, 1, \dots$

a) Yes, it is arithmetic because the common difference is -3 .

b) Yes, it is arithmetic because the common difference is 3 .

c) No, it does not have common difference.

d) Can't be determined

Solution:

Determine whether each sequence is an arithmetic sequence.

4) $-12.3, -9.7, -7.1, -4.5, \dots$

a) Yes, it is arithmetic because the common difference is 2.6 .

b) Yes, it is arithmetic because the common difference is 3.4 .

c) No, it does not have common difference.

d) Can't be determined

Solution:

8	Construct arithmetic sequences	(1-8)	255

Determine whether each sequence is an arithmetic sequence.

5) 4, 7, 9, 12, ...

a) Yes, it is arithmetic because the common difference is 3 .

b) Yes, it is arithmetic because the common difference is 2.

c) No, it does not have common difference.

d) Can't be determined

Solution:

Determine whether each sequence is an arithmetic sequence.

6) 15, 13, 11, 9 ...

a) Yes, it is arithmetic because the common difference is -2 .

b) Yes, it is arithmetic because the common difference is 2.

c) No, it does not have common difference.

d) Can't be determined

Solution:

9	Recognize the properties of equality and identity	(1-8)	31

Use the given property of equality to complete each statement

5) If $23 + 24 = 37$, then $37 = 23 + \underline{\hspace{2cm}}$

Use symmetric Property of Equality.

a) 24

b) 20

c) 37

d) 10

Solution:

Use the given property of equality to complete each statement

6) If $a + 5 = b + 3$ and $a + 5 = 12$,

then $b + 3 = \underline{\hspace{2cm}}$

Use transitive Property of Equality.

a) 24

b) 20

c) 12

d) 10

Solution:

9	Recognize the properties of equality and identity	(1-8)	31

Use the given property of equality to complete each statement 7) If $34 = 19 + 15$, then $19 + 15 =$ _____ Use symmetric Property of Equality.		Solution:
a) 34	b) 20	
c) 37	d) 15	

Use the given property of equality to complete each statement 8) $b + 5 + 12 =$ _____ Use reflexive Property of Equality		Solution:
a) $b+5+12$	b) $5+12+b$	
c) $12+5+b$	d) $b+12+5$	

10	Solve proportions	(4-15)	113

Solve the following proportion		Solution: _____ _____ _____ _____ _____ _____
4) $\frac{15}{35} = \frac{g}{7}$		
a) 5	b) 2	
c) 4	d) 3	

Solve the following proportion		Solution: _____ _____ _____ _____ _____ _____
5) $\frac{7}{10} = \frac{m}{14}$		
a) 15	b) 16.8	
c) 9.8	d) 14	

Solve the following proportion		Solution:
6) $\frac{8}{13} = \frac{v}{21}$		_____
a) 12.92	b) 11.8	_____

c) 13.6	d) 10.5	_____

Solve the following proportion		Solution: _____ _____ _____ _____ _____ _____
7) $\frac{w}{2} = \frac{4.5}{6.8}$		
a) 1.1	b) 1.32	
c) 1.5	d) 1.4	

10	Solve proportions	(4-15)	113

Solve the following proportion		Solution: _____ _____ _____ _____ _____
8) $\frac{1}{0.19} = \frac{12}{n}$		
a) 2.28	b) 0.63	
c) 1.9	d) 2.0	

Solve the following proportion		Solution: _____ _____ _____ _____ _____
9) $\frac{2}{0.21} = \frac{8}{n}$		
a) 0.42	b) 0.52	
c) 0.84	d) 0.58	

Solve the following proportion		Solution: _____ _____ _____ _____ _____
10) $\frac{2.4}{3.6} = \frac{k}{1.8}$		
a) 1.5	b) 1.3	
c) 1.2	d) 1.0	

Solve the following proportion		Solution: _____ _____ _____ _____ _____
11) $\frac{t}{0.3} = \frac{1.7}{0.9}$		
a) 0.65	b) 0.45	
c) 0.33	d) 0.57	

10	Solve proportions	(4-15)	113

Solve the following proportion		Solution: _____ _____ _____ _____ _____ _____
12) $\frac{7}{1.066} = \frac{z}{9.65}$		
a) 60.25	b) 63.37	
c) 65.10	d) 58.40	

Solve the following proportion		Solution: _____ _____ _____ _____ _____
13) $\frac{x-3}{5} = \frac{6}{10}$		
a) 4	b) 6	
c) 5	d) 9	

Solve the following proportion		Solution: _____ _____ _____ _____ _____ _____
14) $\frac{7}{x+9} = \frac{21}{36}$		
a) 9	b) 6	
c) 2	d) 3	

Solve the following proportion		Solution: _____ _____ _____ _____ _____
15) $\frac{10}{15} = \frac{4}{x-5}$		
a) 8	b) 9	
c) 10	d) 11	

11	Solve equations with the variable on each side	(1-10)	97

Solve each equation. Choose the correct solution.

1. $7c + 12 = -4c + 78$

a) $c = 6$

b) $c = 7$

c) $c = 4$

d) $c = 7$

Solution:

Solve each equation. Choose the correct solution

2. $2m - 13 = -8m + 27$

a) $m = 3$

b) $m = 4$

c) $m = 5$

d) $m = 6$

Solution:

"لديك القدرة على تغيير الأمور، ومستقبلك مشرق•"

11	Solve equations with the variable on each side	(1-10)	97

Solve each equation. Choose the correct solution.

3. $9x - 4 = 2x + 3$

a) $x = 1$	b) $x = 2$	Solution:
c) $x = 3$	d) $x = 4$	

Solve each equation. Choose the correct solution.

4. $6 + 3t = 8t - 14$

a) $t = 3$	b) $t = 4$	Solution:
c) $t = 5$	d) $t = 6$	

11	Solve equations with the variable on each side	(1-10)	97

Solve each equation. Choose the correct solution.

5. $\frac{(b-4)}{6} = \frac{b}{2}$

a) $b = -2$

b) $b = 4$

c) $b = 6$

d) $b = 12$

Solution:

Solve each equation. Choose the correct solution.

6. $\frac{(3v+12)}{6} = \frac{4v}{3}$

a) $v = 3$

b) $v = 4$

c) $v = 5$

d) $v = 2.4$

Solution:

11	Solve equations with the variable on each side	(1-10)	97

Solve each equation. Choose the correct solution. 7. $2 (r + 6) = 4 (r + 4)$		Solution:
a) $r = -2$	b) $r = -4$	
c) $r = -1$	d) $r = -3$	

Solve each equation. Choose the correct solution. 8. $6 (n + 5) = 3 (n + 16)$		Solution:
a) $n = 3$	b) $n = 4$	
c) $n = 2$	d) $n = 6$	

11	Solve equations with the variable on each side	(1-10)	97

Solve each equation. Choose the correct solution.

9. $5(g+8)-7=117-g$

a) $g = 4$	b) $g = 5$	Solution: _____ _____ _____ _____ _____
c) $g = 14$	d) $g = 7$	

Solve each equation. Choose the correct solution.

10. $12 - \frac{4}{5}(x + 15) = \left(\frac{2}{5}x + 6\right)$

a) $x = 0$	b) $x = -5$	Solution: _____ _____ _____ _____ _____
c) $x = 10$	d) $x = 15$	

12	Translate sentences into equations	(9-14)	71

9) Twice a increased by the cube of a equals b		Solution: 	
a) $a^2 + 2a = b$	b) $2a + a^3 = b$		
c) $a^3 - 2a = b$	d) $2a^3 + a = b$		

10) Seven less than the sum of p and t is as much as 6.		Solution: 	
a) $p + t + 7 = 6$	b) $p + t - 7 = 6$		
c) $7 - (p + t) = 6$	d) $7(p + t) = 6$		

12	Translate sentences into equations	(9-14)	71

11) The sum of x and its square is equal to y times z.		Solution:
a) $x^2 + y = z$	b) $x + x^2 = yz$	
c) $x^2 - x = yz$	d) $x + y = z^2$	

12) Four times the sum of f and g is identical to six times g.		Solution:
a) $4f + g = 6g$	b) $6(f + g) = 4g$	
c) $4(f + g) = 6g$	d) $f + 4g = 6g$	

12	Translate sentences into equations	(9-14)	71

13) The area A of a square is the length of a side ℓ squared.

Solution:

a) $A = 2L$

b) $A = L + a$

c) $A = L^2$

d) $A = 2L - 2$

14) The perimeter P of a triangle is equal to the sum of the lengths of sides a , b , and c .

Solution:

a) $P = 2\ell + 2w$

b) $P = 2\ell + 2$

c) $P = a + b + c^2$

d) $P = a + b + c$

13	Solve proportions	(40-43)	114

(40). Dana's Market is selling 3 packs of stylus pens for 5.00 Dhs, How much will 10 packs of stylus pens cost at this price ?

a) $x=16.7$

b) $x=15.6$

c) $x=17.6$

d) $x=14.7$

Solution:

(41). During basketball practice, Hala made 36 free throws in 3 minutes. How many free throws will Hala make in 5 minutes ?.

a) $x=3180$

b) $x=60$

c) $x=1536$

d) $x=50$

Solution:

13	Solve proportions	(40-43)	114

(42). Human fingernails grow at an average rate of 3.47 millimeters per month. How much will they grow in 20 months?

a) $x=9.4$

b) $x=6.97$

c) $x=0.1735$

d) $x=69.4$

Solution:

(43). Shmma enlarged the size of a picture to a height of 15 inches. What is the new width of the picture if it was originally 6 inches wide by 4 inches tall?

a) The new width is 1.6 in

b) The new width is 360.5 in

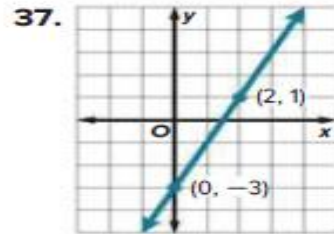
c) The new width is 22.5 in

d) The new width is 10 in

Solution:

Write an equation in slope-intercept form ($y = mx + b$) for each graph shown.

37. Points on the graph: $(0, -3)$ and $(2, 1)$,
What is the equation of the line?



a) $y = 2x - 3$

b) $y = x - 2$

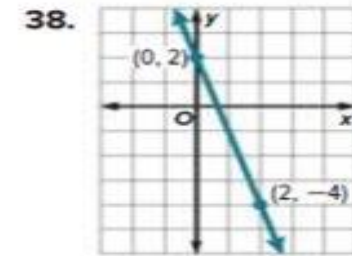
c) $y = 3x - 1$

d) $y = x + 1$

Solution:

Write an equation in slope-intercept form ($y = mx + b$) for each graph shown.

38. Points on the graph: $(0, 2)$ and $(2, -4)$,
What is the equation of the line?



a) $y = -3x + 2$

b) $y = -2x + 4$

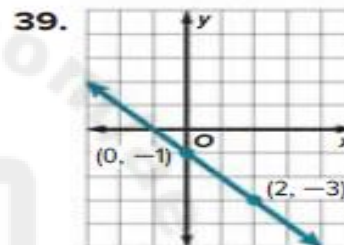
c) $y = -2x + 2$

d) $y = -4x + 2$

Solution:

Write an equation in slope-intercept form ($y = mx + b$) for each graph shown.

39. Points on the graph: $(0, -1)$ and $(2, -3)$, What is the equation of the line?



Solution:

a) $y = -x - 1$

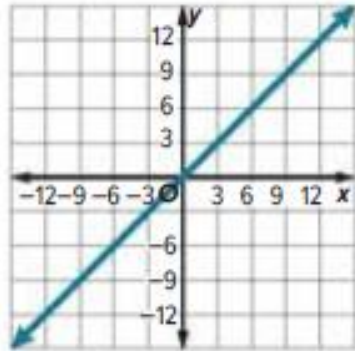
b) $y = -x + 1$

c) $y = x - 3$

d) $y = -x - 2$

1. $g(x) = x + 11$

The graph of $g(x)$ is translated:



a) 11 units left

b) 11 units right

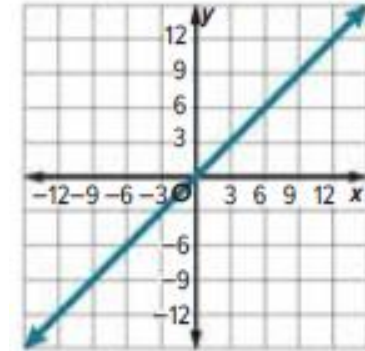
c) 11 units up

d) 11 units down

Solution:

2. $g(x) = x - 8$

The graph of $g(x)$ is translated:



a) 8 units left

b) 8 units right

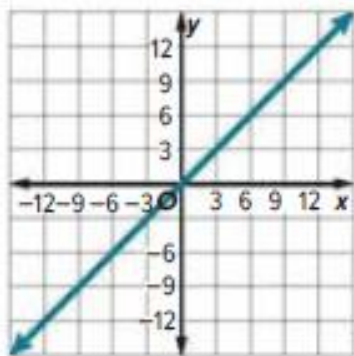
c) 8 unit down

d) 8 unit up

Solution:

3. $g(x) = (x - 7)$

The graph of $g(x)$ is translated:



a) 7 units left

b) 7 units right

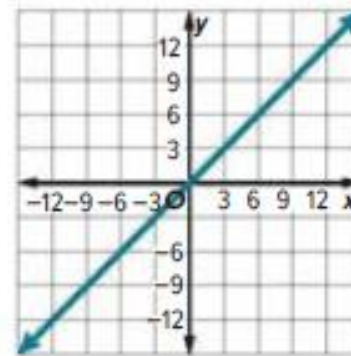
c) 7 units down

d) 7 units up

Solution:

4. $g(x) = (x + 12)$

The graph of $g(x)$ is translated:



a) 12 units left

b) 12 units right

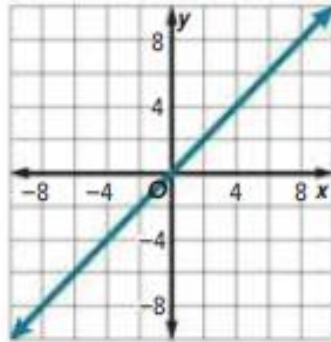
c) 12 units up

d) 12 units down

Solution:

5. $g(x) = (x + 10) - 1$

The graph of $g(x)$ is translated:



Solution:

a) 10 units left and 1 unit up

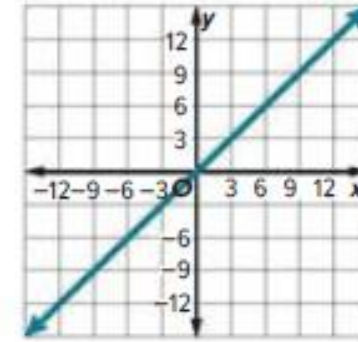
b) 10 units right and 1 unit down

c) 10 units left and 1 unit down

d) 10 units right and
1 unit up

6. $g(x) = (x - 9) + 5$

The graph of $g(x)$ is translated:



Solution:

a) . 9 units left and 5 units up

b) 9 units right and 5 units

c) 9 units left and 5 units

d) 9 units right and 5 units

16	Write verbal expressions for algebraic expressions	(22-35)	18

Write an algebraic expression for each verbal expression. 22. x more than 7		Solution: _____ _____ _____ _____ _____	
a) $7 + x$	b) $x - 7$		
c) $7x$	d) $7/x$		

Write an algebraic expression for each verbal expression. 24. 5 times a number		Solution: _____ _____ _____ _____ _____	
a) $5 + x$	b) $5x$		
c) $x/5$	d) $x - 5$		

Write an algebraic expression for each verbal expression. 23. a number less 35		Solution: _____ _____ _____ _____ _____	
a) $35 - x$	b) $x + 35$		
c) $x - 35$	d) $35/x$		

Write an algebraic expression for each verbal expression. 25. one third of a number		Solution: _____ _____ _____ _____ _____	
a) $x/3$	b) $3x$		
c) $3 + x$	d) $x - 3$		

16	Write verbal expressions for algebraic expressions	(22-35)	18

Write an algebraic expression for each verbal expression. 26. f divided by 10		Solution: _____ _____ _____ _____ _____
a) $f \cdot 10$	b) $f/10$	
c) $10/f$	d) $f + 10$	

Write an algebraic expression for each verbal expression. 28. three times a number plus 16		Solution: _____ _____ _____ _____ _____
a) $3x + 16$	b) $3 + 16x$	
c) $16 - 3x$	d) $\frac{x}{3} + 16$	

Write an algebraic expression for each verbal expression. 27. the quotient of 45 and r		Solution: _____ _____ _____ _____ _____
a) $54r$	b) $45/r$	
c) $r/45$	d) $45 + r$	

Write an algebraic expression for each verbal expression. 29. 18 decreased by 3 times d		Solution: _____ _____ _____ _____ _____
a) $18 + 3d$	b) $18 - 3d$	
c) $3d - 18$	d) $3 - 18d$	

16	Write verbal expressions for algebraic expressions	(22-35)	18

Write an algebraic expression for each verbal expression. 30. k squared minus 11		Solution: _____ _____ _____ _____ _____	
a) $k + 11$	b) $11 - k^2$		
c) $k^2 - 11$	d) $k - 11^2$		

Write an algebraic expression for each verbal expression. 32. The sum of a number and 10		Solution: _____ _____ _____ _____ _____	
a) $10 - x$	b) $10x$		
c) $x + 10$	d) $x - 10$		

Write an algebraic expression for each verbal expression. 31. 20 divided by t to the fifth power		Solution: _____ _____ _____ _____ _____	
a) $20 \div 5t$	b) $20 \div t^5$		
c) $t^5 \div 20$	d) $5 \div 20t$		

Write an algebraic expression for each verbal expression. 33. 15 less than the sum of k and 2		Solution: _____ _____ _____ _____ _____	
a) $15 - (k + 2)$	b) $(k + 2) + 15$		
c) $(k + 2) - 15$	d) $15 + k + 2$		

16	Write verbal expressions for algebraic expressions	(22-35)	18

Write an algebraic expression for each verbal expression. 34. The product of 18 and q		Solution: _____ _____ _____ _____ _____ _____
a) $18 + q$	b) $18 \div q$	
c) $18q$	d) $q - 18$	

Write an algebraic expression for each verbal expression. 35. Six more than twice m		Solution: _____ _____ _____ _____ _____ _____
a) $2m + 6$	b) $6 - 2m$	
c) $2m - 6$	d) $m + 2 + 6$	

17	Use the Distributive Property to evaluate expressions	(23-30)	42

Rewrite each expression using the Distributive Property. Then simplify. 23. $2(x + 4)$		Solution: _____ _____ _____ _____ _____
a) $2x + 4$	b) $2x + 8$	
c) $x + 8$	d) $2x - 8$	

Rewrite each expression using the Distributive Property. Then simplify. 25. $(4 - 3m)8$		Solution: _____ _____ _____ _____ _____
a) $32 - 3m$	b) $4 - 24m$	
c) $32 - 24m$	d) $8 - 12m$	

Rewrite each expression using the Distributive Property. Then simplify. 24. $(5 + n)3$		Solution: _____ _____ _____ _____ _____
a) $15 + n$	b) $3n + 5$	
c) $15 + 3n$	d) $3 + 5n$	

Rewrite each expression using the Distributive Property. Then simplify. 26. $-3(2x - 6)$		Solution: _____ _____ _____ _____ _____
a) $-6x - 18$	b) $-6x + 18$	
c) $6x - 18$	d) $6x + 18$	

17	Use the Distributive Property to evaluate expressions	(23-30)	42

Rewrite each expression using the Distributive Property. Then simplify. 27. $(2 - 4n)17$		Solution: _____ _____ _____ _____ _____ _____
a) $34 - 68n$	b) $34 + 68n$	_____
c) $17n - 8$	d) $2n - 68$	_____

Rewrite each expression using the Distributive Property. Then simplify. 29. $\left(\frac{1}{3} - 2b\right)27$		Solution: _____ _____ _____ _____ _____ _____
a) $9 - 54b$	b) $27 - 2b$	_____
c) $9b - 6$	d) $54b + 9$	_____

Rewrite each expression using the Distributive Property. Then simplify. 28. $11(4d + 6)$		Solution: _____ _____ _____ _____ _____ _____
a) $44d + 6$	b) $44d + 66$	_____
c) $11d + 66$	d) $4d + 66$	_____

Rewrite each expression using the Distributive Property. Then simplify. 30. $4(8p + 16q - 7r)$		Solution: _____ _____ _____ _____ _____ _____
a) $32p + 16q - 28r$	b) $8p + 64q - 7r$	_____
c) $32p + 64q - 28r$	d) $4p + 16q - 7r$	_____

18	Calculate and interpret slope	(11-20)	226

11. Find the slope of the line that passes through each pair of points. (4, 3), (-1, 6)		Solution:
a) $-\frac{3}{5}$	b) $\frac{3}{5}$	
c) $\frac{5}{3}$	d) $-\frac{5}{3}$	

12. Find the slope of the line that passes through each pair of points. (8, -2), (1, 1)		Solution:
a) $-\frac{3}{7}$	b) $\frac{3}{7}$	
c) $-\frac{7}{3}$	d) $\frac{7}{3}$	

18	Calculate and interpret slope	(11-20)	226

13. Find the slope of the line that passes through each pair of points. $(2, 2), (-2, -2)$		Solution: 	
a) 1	b) -1		
c) 2	d) -2		

14. Find the slope of the line that passes through each pair of points. $(6, -10), (6, 14)$		Solution: 	
a) 0	b) undefined		
c) 4	d) -4		

18	Calculate and interpret slope	(11-20)	226

15. Find the slope of the line that passes through each pair of points. $(5, -4), (9, -4)$		Solution:
a) 0	b) undefined	
c) 1	d) -1	

16. Find the slope of the line that passes through each pair of points. $(11, 7), (-6, -2)$		Solution:
a) $\frac{9}{17}$	b) $-\frac{9}{17}$	
c) $\frac{17}{9}$	d) $-\frac{17}{9}$	

18	Calculate and interpret slope	(11-20)	226

17. Find the slope of the line that passes through each pair of points. $(-3, 5), (3, 6)$		Solution: 	
a) $\frac{1}{6}$	b) $-\frac{1}{6}$		
c) 6	d) -6		

18. Find the slope of the line that passes through each pair of points. $(-3, 2), (7, 2)$		Solution: 	
a) undefined	b) 0		
c) $\frac{2}{7}$	d) $-\frac{2}{7}$		

19. Find the slope of the line that passes through each pair of points. $(8, 10), (-4, -6)$		Solution: 	
a) $\frac{4}{3}$	b) $-\frac{4}{3}$		
c) $\frac{3}{4}$	d) $-\frac{3}{4}$		

19	Identify and graph step functions	18(s-d)	265

Graph $f(x)= x-2 $ by making a table. What is the value of $f(x)$ when $x=0.5$?		Solution:
a) 1.5	b) -1.5	
c) 2.5	d) -2.5	

For $f(x)= x-2 $, what is the value of $f(2)$?		Solution:
a) 2	b) 0	
c) -2	d) 1	

19	Identify and graph step functions	18(s-d)	265

What is the domain and range of $f(x)= x-2 $?		Solution: 	
a) Domain: $x \geq 0$; Range: $y \geq 2$	b) Domain: all real numbers; Range: $y \geq 0$		
c) Domain: $x \leq 2$; Range: $y \leq 0$	d) Domain: $0 < x < 20$; Range: $0 < y < 20$		

Graph $f(x)= x+1$ What is the value of $f(x)$ when $x=-1.25$?		Solution: 	
a) 1.25	b) 0.25		
c) -0.25	d) -1.25		

19	Identify and graph step functions	18(s-d)	265

For $f(x)= x+1 $, what is the domain and range?		Solution:
a) Domain: all real numbers; Range: $y \geq 0$	b) Domain: $x \geq -1$; Range: $y \geq 0$	
c) Domain: $x \leq 0$; Range: $y \leq 1$	d) Domain: $x > -1$; Range: $y > 1$	

If $f(x)=2 x-1 $, find $f(5)$		Solution:
a) 4	b) 6	
c) 8	d) 10	

19	Identify and graph step functions	18(s-d)	265

If $f(x)=2 x-1 $, find $f(2.2)$		Solution:
a) 1.2	b) 2.4	
c) 3.4	d) 2	

If $f(x)=2 x-1 $, find $f(5)$		Solution:
a) 4	b) 6	
c) 8	d) 10	

20	Solve equations by using multiplication and division	(43-54)	81

solve the equation $12z=108$		Solution: _____ _____ _____ _____
a) $z = 8$	b) $z = 10$	
c) $z = 9$	d) $z = 12$	

solve the equation $-7t = 49$		Solution: _____ _____ _____ _____
a) $t = -7$	b) $t = 7$	
c) $t = -49$	d) $t = 1$	

solve the equation $18f = -216$		Solution: _____ _____ _____ _____
a) $f = -12$	b) $f = 12$	
c) $f = -18$	d) $f = 216$	

20	Solve equations by using multiplication and division	(43-54)	81

solve the equation $-22 = 11v$		Solution: _____ _____ _____ _____	
a) $v = 2$	b) $v = -2$		
c) $v = -11$	d) $v = 22$		

solve the equation $-6d = -42$		Solution: _____ _____ _____ _____	
a) $d = 7$	b) $d = -7$		
c) $d = 6$	d) $d = -6$		

solve the equation $96 = -24a$		Solution: _____ _____ _____ _____	
a) $a = -4$	b) $a = 4$		
c) $a = -2$	d) $a = 2$		

20	Solve equations by using multiplication and division	(43-54)	81

solve the equation	$\frac{c}{4} = 16$	Solution: _____ _____ _____ _____
a) $c = 64$	b) $c = 12$	
c) $c = 8$	d) $c = 4$	

solve the equation	$\frac{a}{16} = 9$	Solution: _____ _____ _____ _____
a) $a = 25$	b) $a = -36$	
c) $a = 144$	d) $a = -144$	

solve the equation	$-84 = \frac{d}{3}$	Solution: _____ _____ _____ _____
a) $d = 252$	b) $d = -252$	
c) $d = -28$	d) $d = 28$	

20	Solve equations by using multiplication and division	(43-54)	81

solve the equation $-\frac{d}{7} = -13$		Solution: _____ _____ _____ _____
a) $d = -7$	b) $d = 7$	
c) $d = -91$	d) $d = 91$	

solve the equation $\frac{t}{4} = -13$		Solution: _____ _____ _____ _____
a) $t = -52$	b) $t = 52$	
c) $t = -4$	d) $t = 4$	

solve the equation $31 = \frac{-1}{6}n$		Solution: _____ _____ _____ _____
a) $n = 31$	b) $n = -31$	
c) $n = -186$	d) $n = 186$	

Written Exam

"النجاح لا يأتي من الراحة، بل من الاجتهاد"



الرياضيات - Math			
	21	Evaluate algebraic expressions by using the order of operations	(42-53)
			19
	22	Solve equations for specific variables. (2-7)	(19-22)
			125
	23	Solve equations by applying the Distributive Property	(21-24)
			98
	24	Graph linear functions by using the x- and y-intercepts	(9-14)
			216
	25	Calculate and interpret rate of change.	(3-6)
			225



21	Evaluate algebraic expressions by using the order of operations	(42-53)	19

Evaluate each expression if $g = 2$, $r = 3$, and $t = 11$.

42. $g + 6t$

43. $7 - gr$

44. $r^2 + (g^3 - 8)^5$

45. $(2t + 3g) \div 4$

46. $t^2 + 8rt + r^2$

47. $3g(g + r)^2 - 1$

21	Evaluate algebraic expressions by using the order of operations	(42-53)	19

Evaluate each expression if $a = 8$, $b = 4$, and $c = 16$.

48. $a^2bc - b^2$

49. $\frac{c^2}{b^2} + \frac{b^2}{a^2}$

50. $\frac{2b + 3c^2}{4a^2 - 2b}$

51. $\frac{3ab + c^2}{a}$

52. $\left(\frac{a}{b}\right)^2 - \frac{c}{a - b}$

53. $\frac{2a - b^2}{ab} + \frac{c - a}{b^2}$

22	Solve equations for specific variables. (2-7)	(19-22)	125

19. **RECTANGLES** The formula $P = 2\ell + 2w$ represents the perimeter of a rectangle. In this formula, ℓ is the length of the rectangle and w is the width.

a. Solve the formula for ℓ .

b. Find the length when the width is 4 meters and the perimeter is 36 meters.

22	Solve equations for specific variables. (2-7)	(19-22)	125

20. **BASEBALL** The formula $a = \frac{h}{b}$ can be used to find the batting average a of a batter who has h hits in b times at bat.

a. Solve the formula for b .

b. If a batter has a batting average of 0.325 and has 39 hits, how many times has the player been at bat?

22	Solve equations for specific variables. (2-7)	(19-22)	125

21. **SHOPPING** Thomas went to the store to buy videogames for \$13.50 each and controllers. The total amount Thomas spent can be represented by $c = 13.50g + p$, where c is the total cost, g is the number of games he bought, and p is the cost of the controllers. The controllers cost \$55 and Thomas spent \$136 total.

a. Solve the formula for g .

b. Find how many games Thomas bought.

22	Solve equations for specific variables. (2-7)	(19-22)	125

22. **GEOMETRY** The volume of a box V is given by the formula $V = \ell wh$, where ℓ is the length, w is the width, and h is the height.

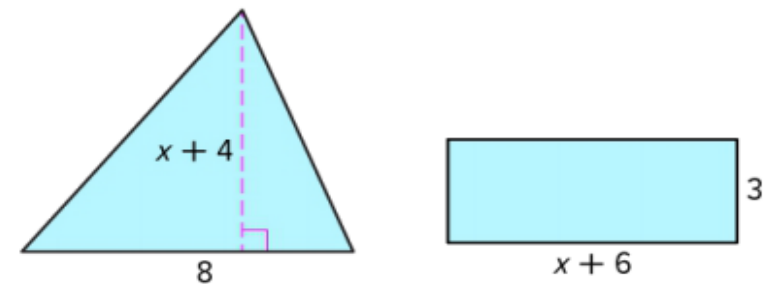
a. Solve the formula for h .

b. What is the height of a box with a volume of 50 cubic meters, length of 10 meters, and width of 2 meters?

23	Solve equations by applying the Distributive Property	(21-24)	98

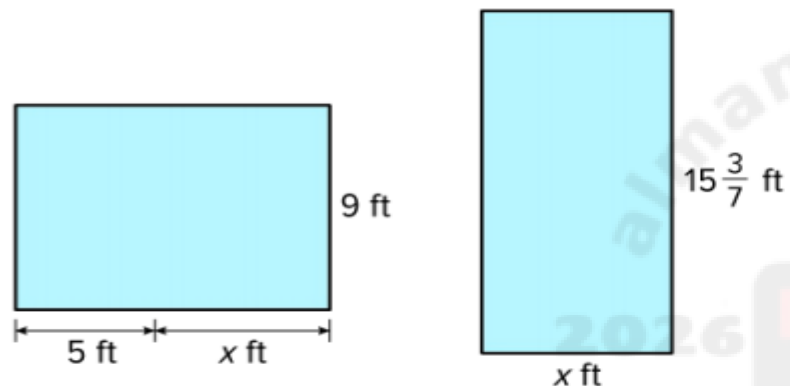
21. **GEOMETRY** Supplementary angles are two angles with measures that have a sum of 180° . Complementary angles are two angles with measures that have a sum of 90° . The measure of the supplement of an angle is 10° more than twice the measure of the complement of the angle. Let $90 - x$ equal the degree measure of the complement angle and $180 - x$ equal the degree measure of the supplement angle. Write and solve an equation to find the measure of the angle.

22. **GEOMETRY** Write and solve an equation to find the value of x so that the figures have the same area.



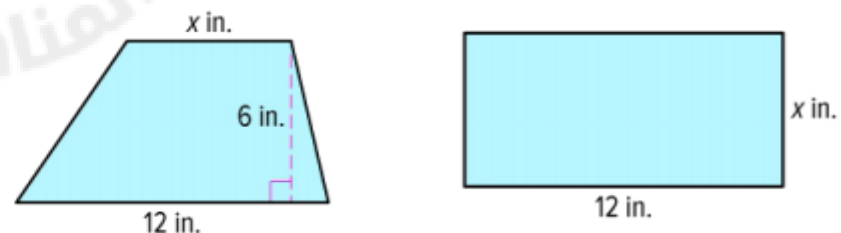
23	Solve equations by applying the Distributive Property	(21-24)	98

23. **GEOMETRY** Write and solve an equation to find the value of x so that the figures have the same area.



24. **GEOMETRY** Write and solve an equation to find the value of x so that the figures have the same area.

The area of a trapezoid is $\frac{1}{2}h(b_1 + b_2)$

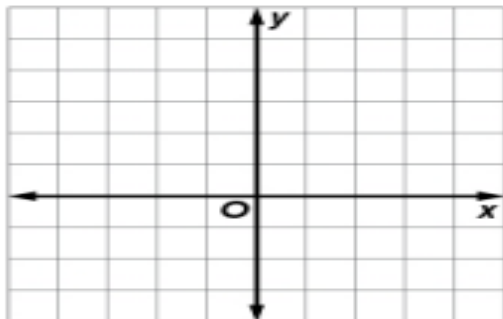


24	Graph linear functions by using the x - and y -intercepts	(9-14)	216

Graph each equation by using the x - and y - intercepts.

9. $y = 4 + 2x$

x	y



To find the x -intercept, let $y = 0$.

$$\begin{array}{ll}
 y = 4 + 2x & \text{Original equation} \\
 0 = 4 + 2x & \text{Replace } y \text{ with } 0. \\
 -4 = 2x & \text{Subtract 4 from each side.} \\
 -2 = x & \text{Divide each side by 2.}
 \end{array}$$

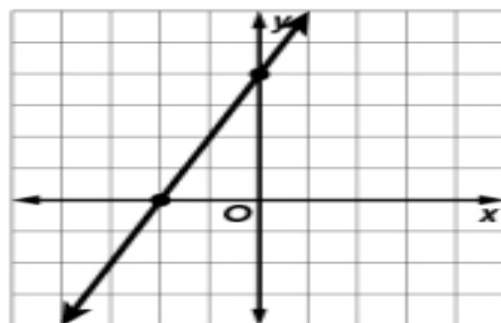
This means that the graph intersects the x -axis at $(-2, 0)$.

To find the y -intercept, let $x = 0$

$$\begin{array}{ll}
 y = 4 + 2x & \text{Original equation} \\
 y = 4 + 2(0) & \text{Replace } x \text{ with } 0. \\
 y = 4 & \text{Simplify.}
 \end{array}$$

This means that the graph intersects the y -axis at $(0, 4)$.

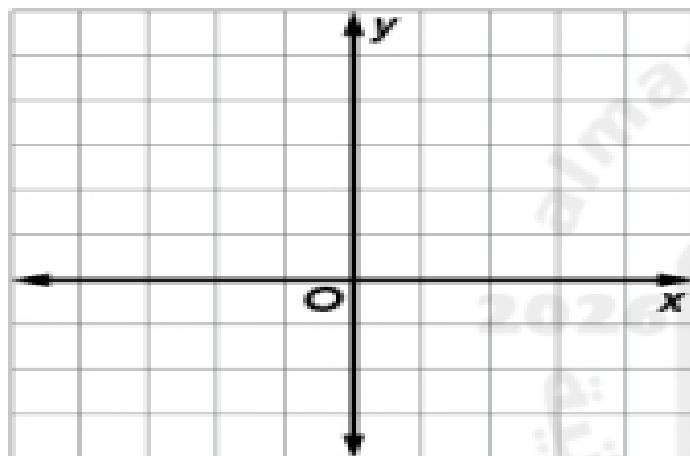
Graph the x -intercept. Graph the y -intercept. Draw a line through the points.



24	Graph linear functions by using the x - and y -intercepts	(9-14)	216

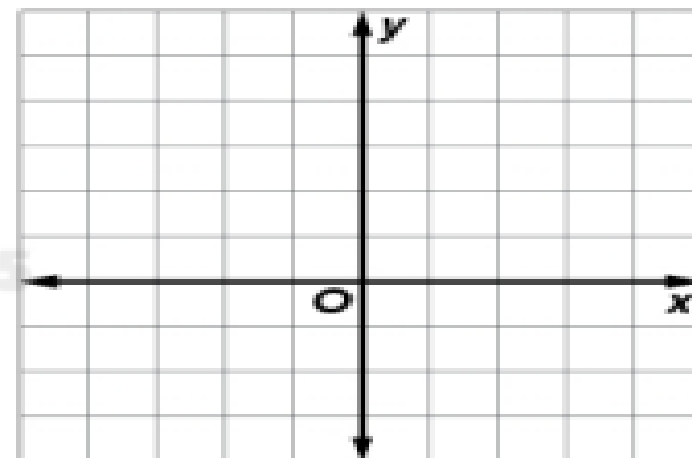
10. $5 - y = -3x$

x	y



11. $x = 5y + 5$

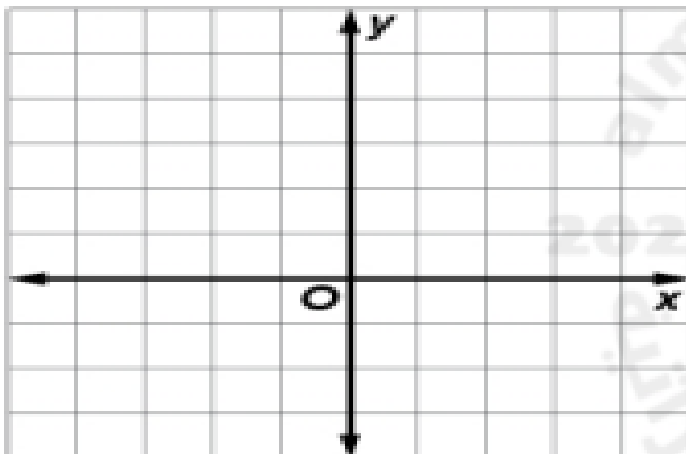
x	y



24	Graph linear functions by using the x - and y -intercepts	(9-14)	216

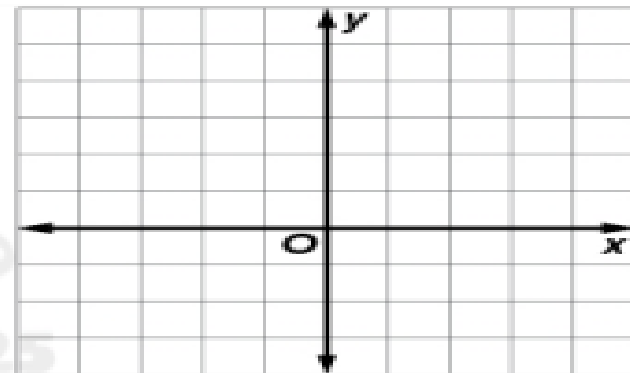
12. $x + y = 4$

x	y



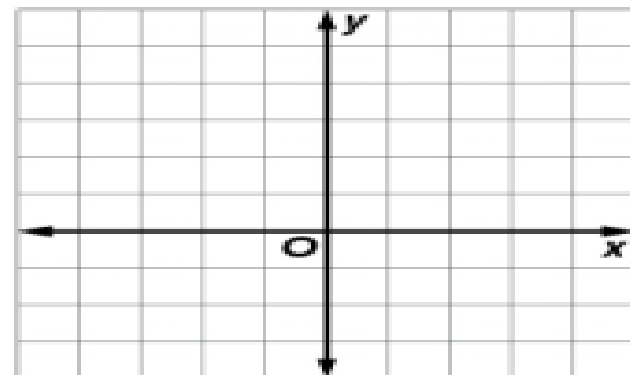
13. $x - y = -3$

x	y



14. $y = 8 - 6x$

x	y



25	Calculate and interpret rate of change.	(3-6)	225

The table below shows the population density (people per square mile) for the state of Texas in different years.

Find the **average annual rate of change** in the population density from **2000 to 2009**.

Year	People/mile squared
1930	22.1
1960	36.4
1980	54.3
2000	79.6
2009	96.7

In 2012, there were about **275 students** in the Delaware High School band.

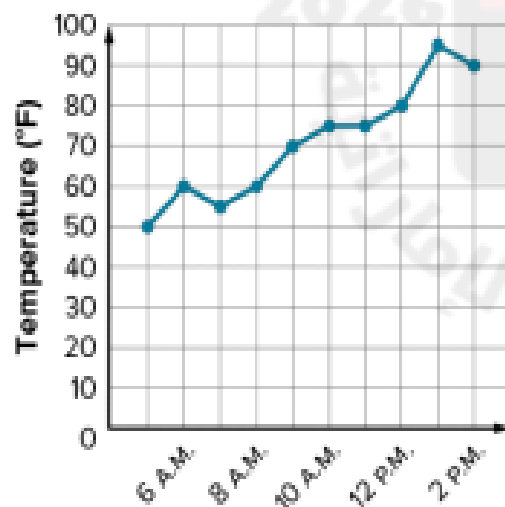
By 2018, the number had increased to **305 students**.

Find the **annual rate of change** in the number of students in the band.

5. Temperature

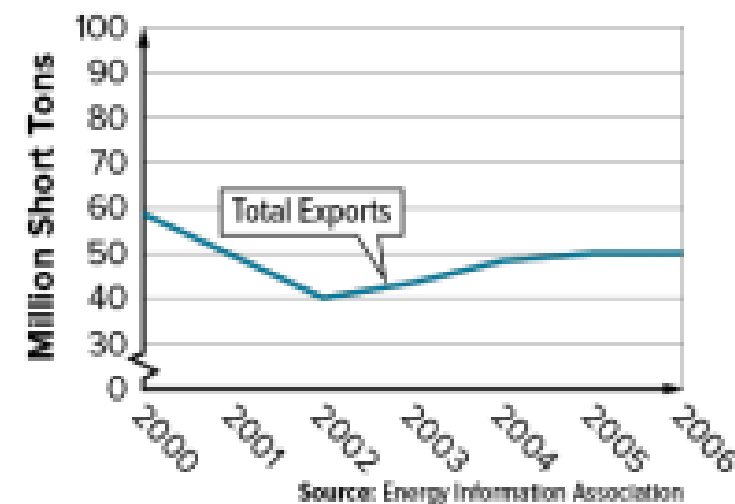
The graph shows the temperature in a city at different hours throughout one day.

- Find the **rate of change** in temperature between **6 A.M.** and **7 A.M.**, and explain what it means in the context of the situation.
- Find the **rate of change** in temperature from **1 P.M.** to **2 P.M.**, and explain what it means in the context of the situation.



6. COAL EXPORTS

The graph shows the annual coal exports from U.S. mines in millions of short tons.



- Find the rate of change in coal exports between 2000 and 2002, and describe its meaning in the context of the situation.
- Find the rate of change in coal exports between 2005 and 2006, and describe its meaning in the context of the situation.

Thank you
for your
attention



"النجاح ليس نقطة وصول،
بل رحلة مستمرة"