شكراً لتحميلك هذا الملف من موقع المناهج الإماراتية

حل تجميعة أسئلة وفق الهيكل الوزاري بريدج

تاريخ نشر الملف على موقع المناهج: 2023-11-07 05:23:02

التواصل الاجتماعي بحسب الصف الحادي عشر العام

روابط مواد الصف الحادي عشر العام على تلغرام

التربية الاسلامية	اللغة العربية	اللغة الانجليزية	الرياضيات

المزيد من الملفات بحسب الصف الحادي عشر العام والمادة رياضيات في الفصل الأول

1	نموذج الهيكل الوزاري الجديد بريدج
2	حل أسئلة الامتحان النهائي
3	إجابات تجميعة أسئلة وفق الهيكل الوزاري
4	نموذج أسئلة امتحان وفق الهيكل الوزاري
5	نموذج الهيكل الوزاري الفصل الأول

هيكل 11 عام بريدج 2024

الأسئلة مع الإجابات

لا تنسوني ووالدي من صالح دعائكم

1	استخدام ترتيب (أولويات) العمليات لإيجاد قيمة التعابير Use the order of operations to evaluate algebraic expressions	Exercises (1-9)	P7

Evaluate each expression if $a = -2$, $b = 3$, and $c = 4.2$.

1. $a - 2b + 3c$ 4.6
2. $2a + (b + 3)^2$ 32
3. $a + 3[b^2 - (a + c)]$ 18.4
4. $5c - 2[(b - a) + c]$ 2.6
5. $4(2a + 3b) - 2c$ 11.6
6. $\frac{a^2 + 4c}{3b + 2a}$ 4.16
7. $\frac{b^3 + ac}{ab + 2bc}$ 0.96875
8. $\frac{3b + 2a}{5 - c}$ 6.25
9. $\frac{3a - 2c}{4ab}$ 0.6

Write an algebraic expression to represent each verbal expression.

22. the difference between the product of four and a number and 6 $4n - 6$

23. the product of the square of a number and 8 $8x^2$

24. fifteen less than the cube of a number $x^3 - 15$

25. five more than the quotient of a number and 4 $\frac{x}{4} + 5$

Solve each equation or formula for the specified variable.

45. $E = mc^2$, for m $m = \frac{E}{c^2}$

46. $c(a + b) - d = f$, for a $a = \frac{f + d}{c} - b$

47. $z = \pi q^3 h$, for h $h = \frac{z}{\pi q^3}$

48. $\frac{x + y}{z} - a = b$, for y $y = z(a + b) - x$

49. $y = ax^2 + bx + c$, for a $a = \frac{y - bx - c}{x^2}$

50. $wx + yz = bc$, for z $z = \frac{bc - wx}{y}$

Example 1 Domain and Range

State the domain and range of each relation. Then determine whether each relation is a *function*. If it is a function, determine if it is *one-to-one*, *onto*, *both*, or *neither*.

a. **{(−6, −1), (−5, −9), (−3, −7), (−1, 7), (6, −9)}**

Domain: {−6, −5, −3, −1, 6} Range: {−9, −7, −1, 7}

function: Yes, because each element of the domain is paired with one element of the range.

one-to-one: No, because each element of the domain is not paired with a unique element of the range.

onto: Yes, because each element of the range corresponds to an element of the domain.

b.

x	2	−1	−2	−1	2
y	−2	−1	0	1	2

Domain: {−2, −1, 2} Range: {−2, −1, 0, 1, 2}

The relation is not a function because 2 is mapped to both −2 and 2, and −1 is mapped to both −1 and 1.

5	تحديد العلاقات والدوال الخطية Identify linear relations and functions.	Exercises (1-4)	P71

State whether each function is a linear function. Write *yes* or *no*. Explain.

1. $f(x) = \frac{x + 12}{5}$

1. Yes;

2. $g(x) = \frac{7 - x}{x}$

2. No;

3. $p(x) = 3x^2 - 4$

3. No;

4. $q(x) = -8x - 21$

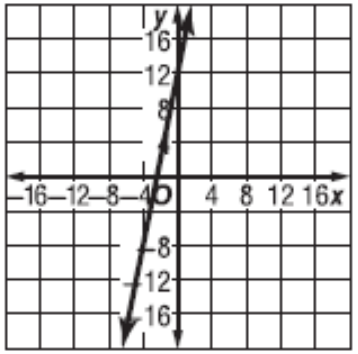
4. Yes;

6	كتابة المعادلة الخطية بالصورة القياسية Write linear equations in standard form	Exercises (12-15)	P71

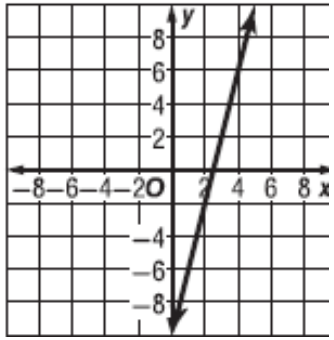
Find the x-intercept and the y-intercept of the graph of each equation. Then graph the equation using the intercepts. **12–15. See Chapter 2 Answer Appendix.**

12. $y = 5x + 12$ **13.** $y = 4x - 10$ **14.** $2x + 3y = 12$ **15.** $3x - 4y - 6 = 15$

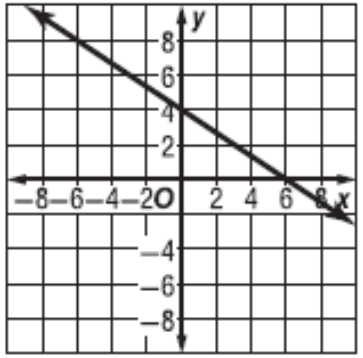
12. $-\frac{12}{5}$; 12



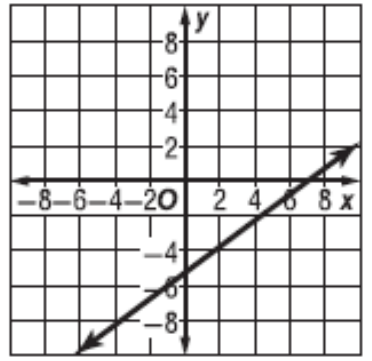
13. $\frac{5}{2}$; −10



14. 6; 4



15. 7; $-\frac{21}{4}$



7	تحديد ميل مستقيم Determine the slope of a line	Exercises (12-17)	P80

Find the slope of the line that passes through each pair of points. Express as a fraction in simplest form.

12. $(-2, 11), (5, 6)$ $-\frac{5}{7}$

13. $(-9, -11), (6, 3)$ $\frac{14}{15}$

14. $(-1.5, 3.5), (4.5, 6)$ $\frac{5}{12}$

15. $(-4.5, 9.5), (-1, 2.5)$ -2

16. $(-8, -0.5), (-4, 5)$ $\frac{11}{8}$

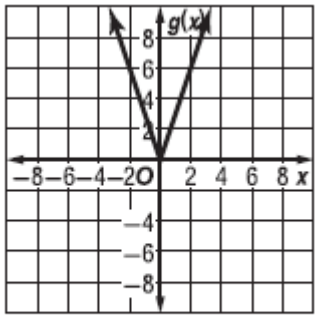
17. $(-6, -2), (-1.5, 5.5)$ $\frac{5}{3}$

8	كتابة وتمثيل الدوال الدرجية ودوال القيمة المطلقة. Write and graph step and absolute value functions.	Exercises (8-11)	P96

Graph each function. Identify the domain and range. 8–11. See Chap

8. $g(x) = |-3x|$

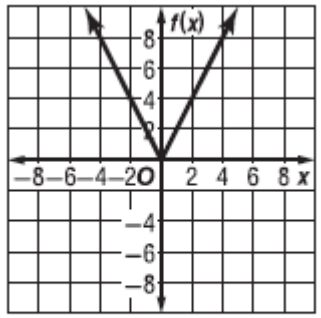
8.



D = {all real numbers};
R = $\{g(x) | g(x) \geq 0\}$

9. $f(x) = 2|x|$

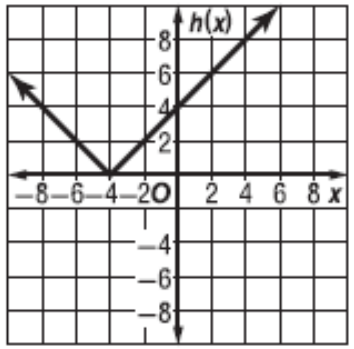
9.



D = {all real numbers};
R = $\{f(x) | f(x) \geq 0\}$

10. $h(x) = |x + 4|$

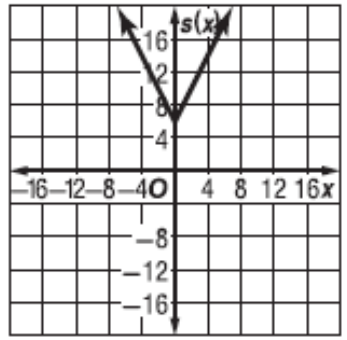
10.



D = {all real numbers};
R = $\{h(x) | h(x) \geq 0\}$

11. $s(x) = |-2x| + 6$

11.



D = {all real numbers};
R = $\{s(x) | s(x) \geq 6\}$

9	حل أنظمة المعادلات الخطية جبريا Solve systems of linear equations algebraically	Exercises (13-24)	P133

Solve each system of equations by using substitution.

13. $x + 5y = 3$
$3x - 2y = -8$ **(−2, 1)**

14. $y = 2x - 10$
$y = -4x + 8$ **(3, −4)**

15 $2a + 8b = -8$
$3a - 5b = 22$ **(4, −2)**

16. $a - 3b = -22$
$4a + 2b = -4$ **(−4, 6)**

17. $6x - 7y = 23$
$8x + 4y = 44$ **(5, 1)**

18. $9c - 3d = -33$
$6c + 5d = -8$ **(−3, 2)**

Solve each system of equations by using elimination.

19. $-6w - 8z = -44$
$3w + 6z = 36$ **(−2, 7)**

20. $4x - 3y = 29$
$4x + 3y = 35$ **(8, 1)**

21. $3a + 5b = -27$
$4a + 10b = -46$ **(−4, −3)**

22. $8a - 3b = -11$
$5a + 2b = -3$ **(−1, 1)**

23. $5a + 15b = -24$
$-2a - 6b = 28$ **no solution**

24. $6x - 4y = 30$
$12x + 5y = -18$ **(1, −6)**

25. MULTIPLE CHOICE What is the solution of the linear system? **B**

$$4x + 3y = 2$$
$$4x - 2y = 12$$

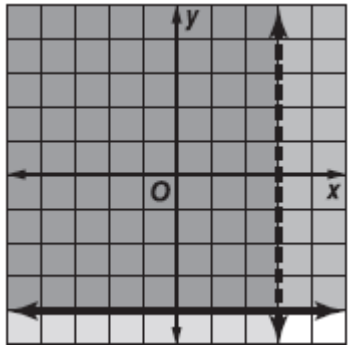
A $(8, -10)$ **B** $(2, -2)$ **C** $(-10, 14)$ **D** no solution

10	حل أنظمة المتباينات بالتمثيل البياني	Exercises (7-15)	P141
	Solve systems of inequalities by graphing.		

Solve each system of inequalities by graphing.

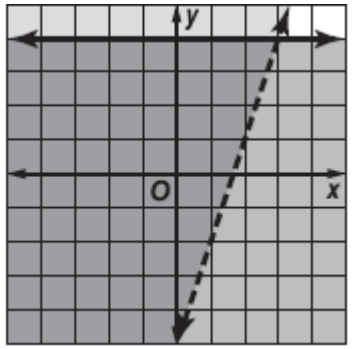
7. $x < 3$
$y \geq -4$

7.



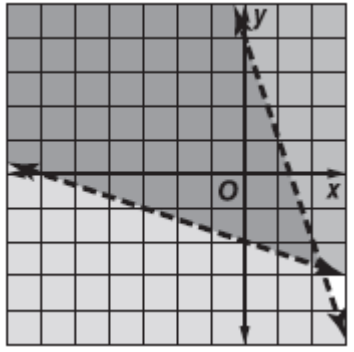
8. $y > 3x - 5$
$y \leq 4$

8.



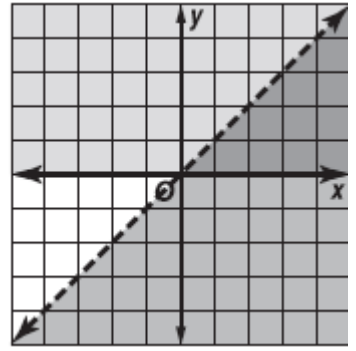
9 $y < -3x + 4$
$3y + x > -6$

9.



10. $y \geq 0$
$y < x$

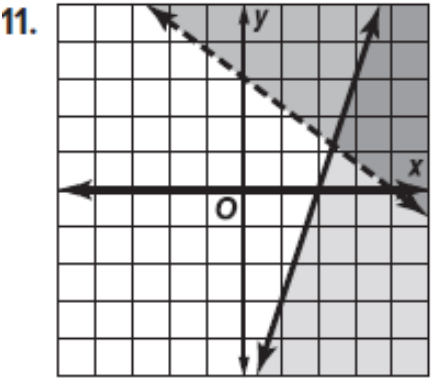
10.



0

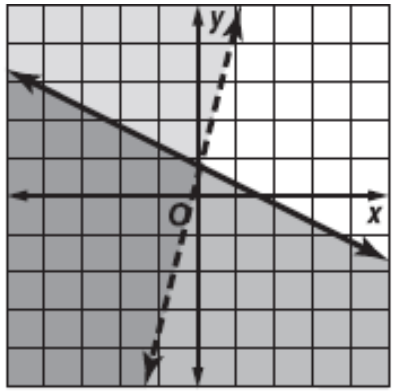
11. $6x - 2y \geq 12$
$3x + 4y > 12$

11.



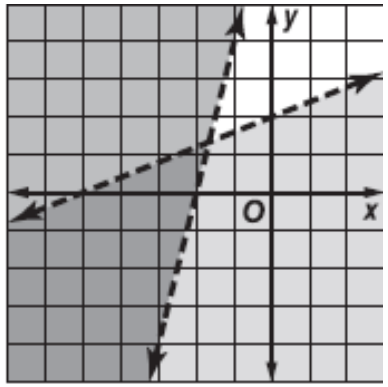
12. $-8x > -2y - 1$
$-4y \geq 2x - 5$

12.



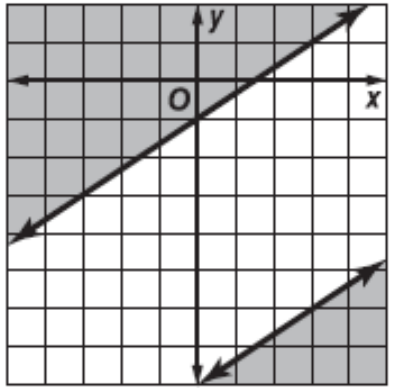
13. $5y < 2x + 10$
$y - 4x > 8$

13.



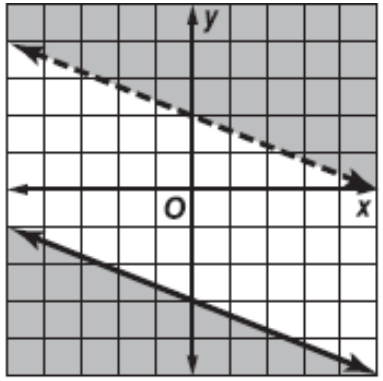
14. $3y - 2x \leq -24$
$y \geq \frac{2}{3}x - 1$

14.



15. $y > -\frac{2}{5}x + 2$
$5y \leq -2x - 15$

15.



11	التعرف على خاصية تساوي مصفوفتين Identify the property of equality of two matrices	Exercises (17-22)	P167

Solve each equation.

17. $[4x \quad 3y] = [12 \quad -1]$

18. $[2x \quad 3 \quad 3z] = [5 \quad 3y \quad 9]$

19. $\begin{bmatrix} 4x \\ 5 \end{bmatrix} = \begin{bmatrix} 15 + x \\ 2y - 1 \end{bmatrix}$

20. $\begin{bmatrix} x + 3y \\ 3x + y \end{bmatrix} = \begin{bmatrix} -13 \\ 1 \end{bmatrix}$

21. $\begin{bmatrix} 2x + y \\ x - 3y \end{bmatrix} = \begin{bmatrix} 5 \\ 13 \end{bmatrix}$

22. $\begin{bmatrix} 4x - 3 & 3y \\ 7 & 13 \end{bmatrix} = \begin{bmatrix} 9 & -15 \\ 7 & 2z + 1 \end{bmatrix}$

12	ضرب وقسمة وتبسيط أحاديات الحد والتعابير التي تحتوي على قوى Multiply, divide, and simplify monomials and expressions involving powers	Exercises (16-23)	P221

Simplify. Assume that no variable equals 0. 16. $\frac{20x^4}{y^2}$ 17. $-8b^5c^3$

16. $(5x^3y^{-5})(4xy^3)$

17. $(-2b^3c)(4b^2c^2)$

18. $\frac{a^3n^7}{an^4}$ a^2n^3

19. $\frac{-y^3z^5}{y^2z^3}$ $-yz^2$

20. $\frac{-7x^5y^5z^4}{21x^7y^5z^2}$ $\frac{z^2}{-3x^2}$

21. $\frac{9a^7b^5c^5}{18a^5b^9c^3}$ $\frac{a^2c^2}{2b^4}$

22. $(n^5)^4$ n^{20}

23. $(z^3)^6$ z^{18}

13	قسمة كثيرات الحدود باستخدام القسمة المطولة Divide polynomials using long division	Exercises (5A-5D)	P228

Use synthetic division to find each quotient.

5A. $(8x^4 - 4x^2 + x + 4) \div (2x + 1)$ **5A.** $4x^3 - 2x^2 - x + 1 + \frac{3}{2x+1}$

5B. $(8y^5 - 2y^4 - 16y^2 + 4) \div (4y - 1)$ **5B.** $2y^4 - 4y - 1 + \frac{3}{4y-1}$

5C. $(15b^3 + 8b^2 - 21b + 6) \div (5b - 4)$ **5C.** $3b^2 + 4b - 1 + \frac{2}{5b-4}$

5D. $(6c^3 - 17c^2 + 6c + 8) \div (3c - 4)$ **5D.** $2c^2 - 3c - 2$

14	حل معادلات كثيرات الحدود باستخدام التحليل إلى العوامل. Solve polynomial equations by factoring.	Exercises (30-35)	P258

Solve each equation.

30. $x^4 + x^2 - 90 = 0$

30. $3, -3, \pm i\sqrt{10}$

31. $x^4 - 16x^2 - 720 = 0$

31. $6, -6, \pm 2i\sqrt{5}$

32. $x^4 - 7x^2 - 44 = 0$

32. $\pm\sqrt{11}, \pm 2i$

33. $x^4 + 6x^2 - 91 = 0$

33. $\pm\sqrt{7}, \pm i\sqrt{13}$

34. $x^3 + 216 = 0$

34. $-6, 3 \pm 3i\sqrt{3}$

35. $64x^3 + 1 = 0$

$-\frac{1}{4}, \frac{1 \pm i\sqrt{3}}{8}$

15	تحديد ما إذا كانت ثنائية حد عاملا لكثيرة حدود أم لا باستخدام التعويض التركيبي Determine whether a binomial is a factor of a polynomial by using synthetic substitution.	Exercises (17-24)	P267

Given a polynomial and one of its factors, find the remaining factors of the polynomial.

17. $x^3 - 3x + 2; x + 2$ $(x-1)^2$

18. $x^4 + 2x^3 - 8x - 16; x + 2$ $x-2, x^2+2x+4$

19. $x^3 - x^2 - 10x - 8; x + 2$ $x-4, x+1$

20. $x^3 - x^2 - 5x - 3; x - 3$ $(x+1)^2$

21. $2x^3 + 17x^2 + 23x - 42; x - 1$ **21.** $x+6, 2x+7$

22. $2x^3 + 7x^2 - 53x - 28; x - 4$ $x+7, 2x+1$

23. $x^4 + 2x^3 + 2x^2 - 2x - 3; x - 1$

23. $x+1, x^2+2x+3$

24. $x^3 + 2x^2 - x - 2; x + 2$ $x-1, x+1$

16	حل معادلات القيمة المطلقة Solve absolute value equations.	Exercises (23-42)	P30 &P31

Solve each equation. Check your solutions.

23. $|z - 13| = 21$ {34, −8}

24. $|w + 9| = 17$ {8, −26}

25. $9 = |d + 5|$ {4, −14}

26. $35 = |x - 6|$ {−29, 41}

27. $5|q + 6| = 20$ {−2, −10}

28. $-3|r + 4| = -21$ {3, −11}

16	حل معادلات القيمة المطلقة Solve absolute value equations.	Exercises (23-42)	P30 &P31

29. $3|2a-4|=0$ {2}

30. $8|5w-1|=0$ $\left\{\frac{1}{5}\right\}$

31 $2|3x-4|+8=6$ $\varnothing$

32. $4|7y+2|-8=-7$ $\left\{-\frac{1}{4},-\frac{9}{28}\right\}$

33. $-3|3t-2|-12=-6$ $\varnothing$

34. $-5|3z+8|-5=-20$ $\left\{-\frac{5}{3},-\frac{11}{3}\right\}$

16	حل معادلات القيمة المطلقة Solve absolute value equations.	Exercises (23-42)	P30 &P31

35. MONEY The U.S. Mint produces quarters that weigh about 5.67 grams each. After the quarters are produced, a machine weighs them. If the quarter weighs 0.02 gram more or less than the desired weight, the quarter is rejected. Write and solve an equation to find the heaviest and lightest quarters the machine will approve. $|x - 5.67| = 0.02$; heaviest: 5.69 g; lightest: 5.65 g

Evaluate each expression if $q = -8$, $r = -6$, and $t = 3$.

36. $12 - t|3r + 2|$ -36

37. $2q + |2rt + q|$ 28

38. $-5t - q|8r - t|$ 393

Solve each equation. Check your solutions.

39. $8x = 2|6x - 2|$ $\left\{1, \frac{1}{5}\right\}$

40. $-6y + 4 = |4y + 12|$ $\left\{-\frac{4}{5}\right\}$

41. $8z + 20 = -|2z + 4|$ $\left\{-\frac{1}{8}\right\}$

42. $-3y - 2 = |6y + 25|$ $\left\{-3, -\frac{23}{3}\right\}$

17	كتابة معادلة لمستقيم معطى ميله ونقطة على المستقيم Write an equation of a line given the slope and a point on the line	Exercises (23-27)	P87

PERSEVERANCE Write an equation in slope-intercept form for the line that satisfies each set of conditions.

23. passes through (4, 2), perpendicular to $y = -2x + 3$ $y = \frac{1}{2}x$

24. passes through $(-6, -6)$, parallel to $y = \frac{4}{3}x + 8$ $y = \frac{4}{3}x + 2$

25. passes through (12, 0), parallel to $y = -\frac{1}{2}x - 3$ $y = -\frac{1}{2}x + 6$

26. passes through (10, 2), perpendicular to $y = 4x + 6$ $y = -0.25x + 4.5$

27. **FINANCIAL LITERACY** Julio buys a used car for $5900. Monthly expenses for the car—which include insurance, maintenance, and gas—average $180 per month. Write an equation that represents the total cost of buying and owning the car for x months.

27. $y = 180x + 5900$

18	تحديد واستخدام الدوال الأصلية Identify and use parent functions	Exercises (14-31)	P106

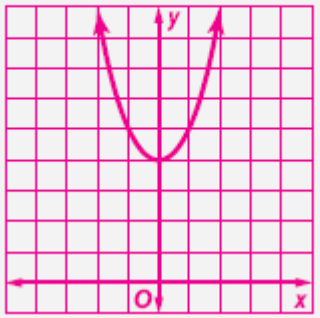
Describe the translation in each function. Then graph the function.

14. $y = x^2 + 4$

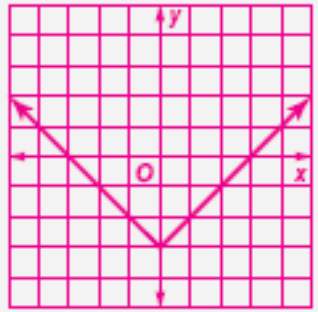
15. $y = |x| - 3$

16. $y = x - 1$

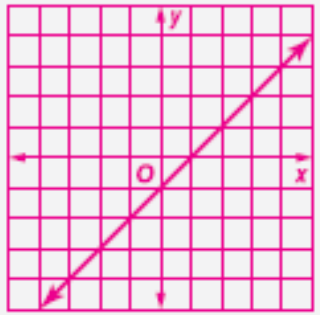
14. translation of the graph of $y = x^2$ up 4 units



15. translation of the graph of $y = |x|$ down 3 units



16. translation of the graph of $y = x$ down 1 unit or right 1 unit

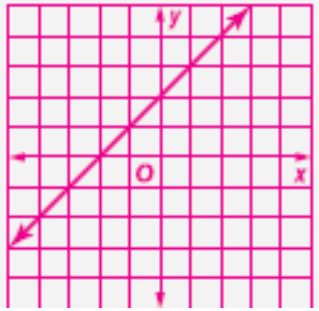


17. $y = x + 2$

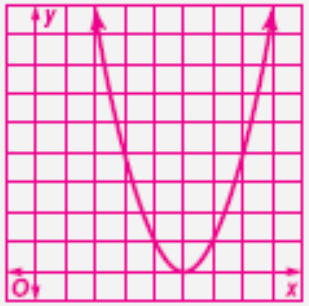
18. $y = (x - 5)^2$

19. $y = |x + 6|$

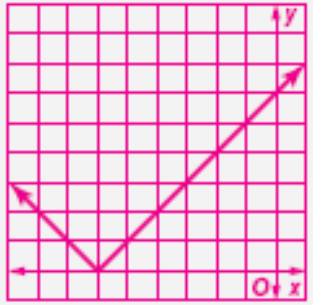
17. translation of the graph of $y = x$ up 2 units or left 2 units



18. translation of the graph of $y = x^2$ right 5 units



19. translation of the graph of $y = |x|$ left 6 units

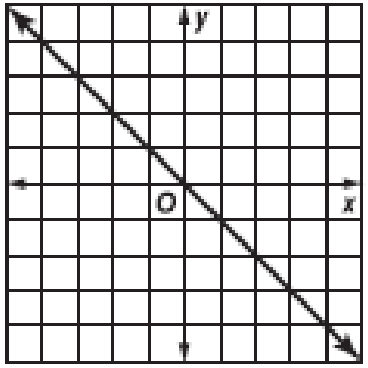


18	تحديد واستخدام الدوال الأصلية Identify and use parent functions	Exercises (14-31)	P106

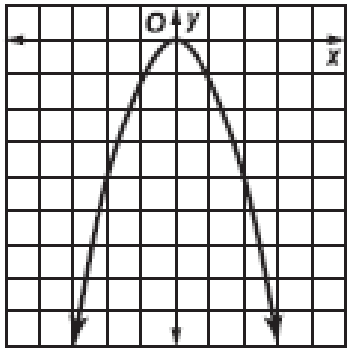
Describe the reflection in each function. Then graph the function.

20. $y = -x$ **21.** $y = -x^2$ **22.** $y = (-x)^2$

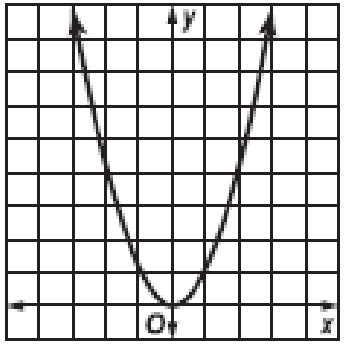
20. reflection of the graph of $y = x$ across the x-axis



21. reflection of the graph of $y = x^2$ across the x-axis

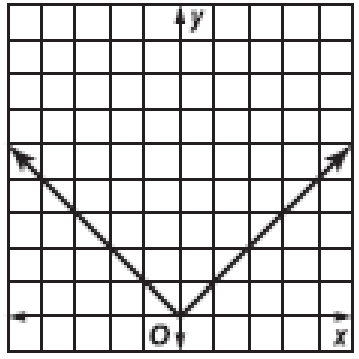


22. reflection of the graph of $y = x^2$ across the y-axis

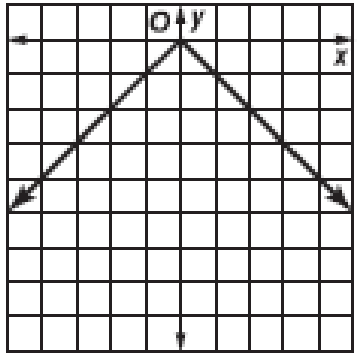


23. $y = |-x|$ **24.** $y = -|x|$ **25.** $y = (-x)$

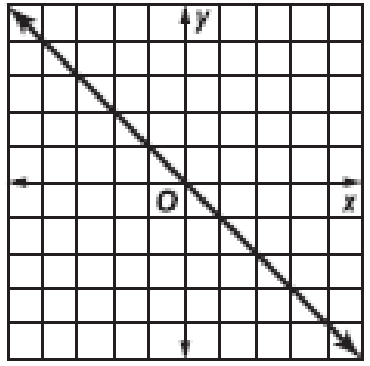
23. reflection of the graph of $y = |x|$ across the y-axis



24. reflection of the graph of $y = |x|$ across the x-axis



25. reflection of the graph of $y = x$ across the y-axis

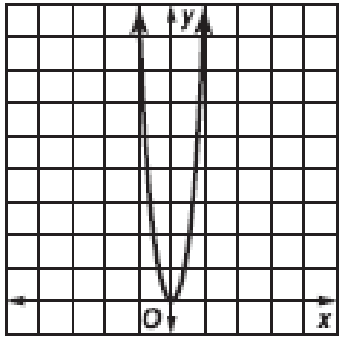


18	تحديد واستخدام الدوال الأصلية Identify and use parent functions	Exercises (14-31)	P106

Describe the dilation in each function. Then graph the function.

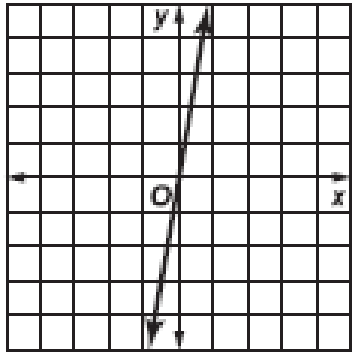
26. $y = (3x)^2$

26. horizontal compression of the graph of $y = x^2$



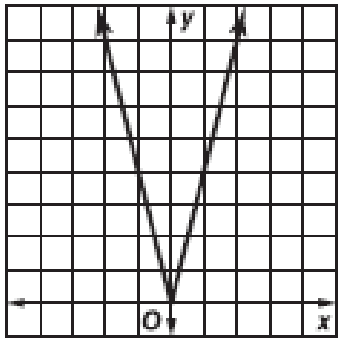
27. $y = 6x$

27. vertical expansion of the graph of $y = x$; The slope is steeper than that of $y = x$.



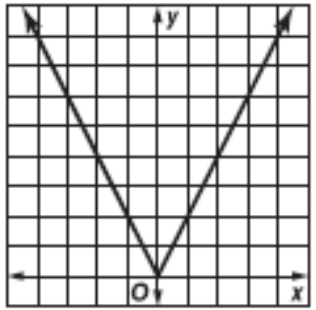
28. $y = 4|x|$

28. The dilation stetches the graph of $y = |x|$ vertically.



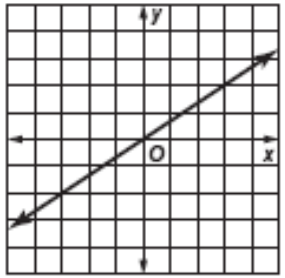
29. $y = |2x|$

29. The dilation compresses the graph of $y = |x|$ horizontally.



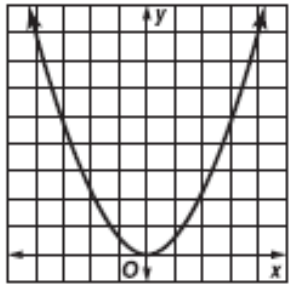
30. $y = \frac{2}{3}x$

30. The dilation compresses the graph of $y = x$ vertically; the slope is not as steep as that of $y = x$.



31. $y = \frac{1}{2}x^2$

31. vertical compression of the graph of $y = x^2$



19	Perform algebraic operations with matrices إجراء عمليات جبرية على المصفوفات	Example 4	P172
	Multiply matrices ضرب المصفوفات	Exercises (4-11)	P181

Example 4 Multi-Step Operations

If $A = \begin{bmatrix} -9 & 12 \\ 2 & -6 \end{bmatrix}$ and $B = \begin{bmatrix} -4 & -8 \\ 2 & -3 \end{bmatrix}$, find $-4B - 3A$.

$$-4B - 3A = -4\begin{bmatrix} -4 & -8 \\ 2 & -3 \end{bmatrix} - 3\begin{bmatrix} -9 & 12 \\ 2 & -6 \end{bmatrix}$$

$$= \begin{bmatrix} -4(-4) & -4(-8) \\ -4(2) & -4(-3) \end{bmatrix} - \begin{bmatrix} 3(-9) & 3(12) \\ 3(2) & 3(-6) \end{bmatrix}$$

$$= \begin{bmatrix} 16 & 32 \\ -8 & 12 \end{bmatrix} - \begin{bmatrix} -27 & 36 \\ 6 & -18 \end{bmatrix}$$

$$= \begin{bmatrix} 16 - (-27) & 32 - 36 \\ -8 - 6 & 12 - (-18) \end{bmatrix}$$

$$= \begin{bmatrix} 43 & -4 \\ -14 & 30 \end{bmatrix}$$

GuidedPractice

4. If $A = \begin{bmatrix} -5 & 3 \\ 6 & -8 \\ 2 & 9 \end{bmatrix}$ and $B = \begin{bmatrix} 12 & 5 \\ 5 & -4 \\ 4 & -7 \end{bmatrix}$, find $-6B + 7A$.

19	Perform algebraic operations with matrices إجراء عمليات جبرية على المصفوفات	Example 4	P172
	Multiply matrices ضرب المصفوفات	Exercises (4-11)	P181

Find each product, if possible.

4. $\begin{bmatrix} 2 & 1 \\ 7 & -5 \end{bmatrix} \cdot \begin{bmatrix} -6 & 3 \\ -2 & -4 \end{bmatrix}$

5. $\begin{bmatrix} 10 & -2 \\ -7 & 3 \end{bmatrix} \cdot \begin{bmatrix} 1 & 4 \\ 5 & -2 \end{bmatrix}$

6. $\begin{bmatrix} 9 & -2 \end{bmatrix} \cdot \begin{bmatrix} -2 & 4 \\ 6 & -7 \end{bmatrix}$

7. $\begin{bmatrix} -9 \\ 6 \end{bmatrix} \cdot \begin{bmatrix} -1 & -10 & 1 \end{bmatrix}$

8. $\begin{bmatrix} -8 & 7 & 4 \\ -5 & -3 & 8 \end{bmatrix} \cdot \begin{bmatrix} 10 & 6 \\ 8 & 4 \end{bmatrix}$

9. $\begin{bmatrix} 2 & 8 \\ 3 & -1 \end{bmatrix} \cdot \begin{bmatrix} 6 \\ -7 \end{bmatrix}$

10. $\begin{bmatrix} -4 & 3 & 2 \\ -1 & -5 & 4 \end{bmatrix} \cdot \begin{bmatrix} 2 & 1 & 6 \\ 8 & 4 & -1 \\ 5 & 3 & -2 \end{bmatrix}$

11. $\begin{bmatrix} 2 & 5 & 3 & -1 \\ -3 & 1 & 8 & -3 \end{bmatrix} \cdot \begin{bmatrix} 6 & -3 \\ -7 & 1 \\ 2 & 0 \\ -1 & 0 \end{bmatrix}$

20	تحديد الأشكال العامة للتمثيلات البيانية للدوال كثيرة الحدود. Identify general shapes of graphs of polynomial functions.	Exercises (35-40)	P239

Complete each of the following.

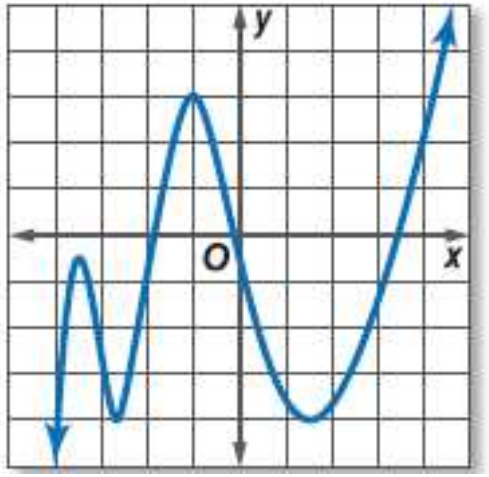
a. Estimate the x-coordinate of every turning point and determine if those coordinates are relative maxima or relative minima.

b. Estimate the x-coordinate of every zero.

c. Determine the smallest possible degree of the function.

d. Determine the domain and range of the function.

34.



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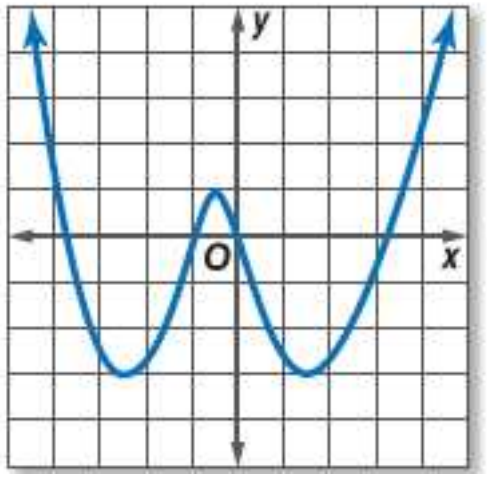

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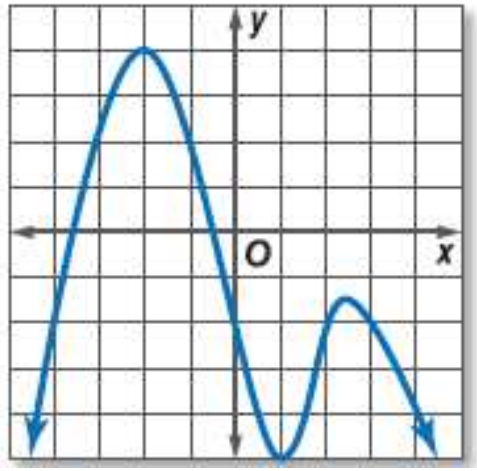

20	تحديد الأشكال العامة للتمثيلات البيانية للدوال كثيرة الحدود. Identify general shapes of graphs of polynomial functions.	Exercises (35-40)	P239

Complete each of the following.

a. Estimate the x-coordinate of every turning point and determine if those coordinates are relative maxima or relative minima.

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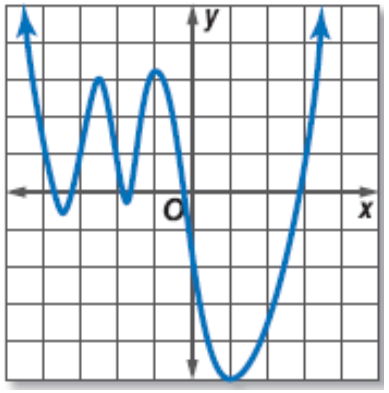
37.



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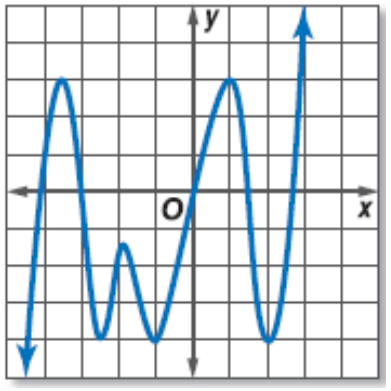
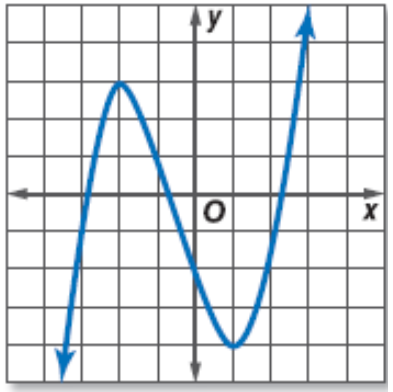


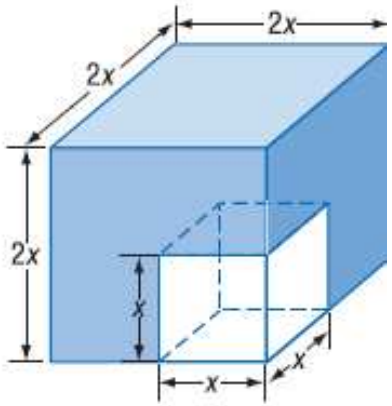
39.



21	حل معادلات كثيرات الحدود باستخدام التحليل إلى العوامل.	Example4	P256
	Solve polynomial equations by factoring.		

Real-World Example 4 Solve Polynomial Functions by Factoring

GEOMETRY **Refer to the beginning of the lesson. If the small cube is half the length of the larger cube and the figure is 7000 cubic centimeters, what should be the dimensions of the cubes?**



Since the length of the smaller cube is half the length of the larger cube, then their lengths can be represented by x and $2x$, respectively. The volume of the object equals the volume of the larger cube minus the volume of the smaller cube.

$$(2x)^3 - x^3 = 7000 \quad \text{Volume of object}$$
$$8x^3 - x^3 = 7000 \quad (2x)^3 = 8x^3$$
$$7x^3 = 7000 \quad \text{Subtract.}$$
$$x^3 = 1000 \quad \text{Divide.}$$
$$x^3 - 1000 = 0 \quad \text{Subtract 1000 from each side.}$$
$$(x - 10)(x^2 + 10x + 100) = 0 \quad \text{Difference of cubes}$$

$x - 10 = 0$ or $x^2 + 10x + 100 = 0$ Zero Product Property

$x = 10$ $\qquad x = -5 \pm 5i\sqrt{3}$

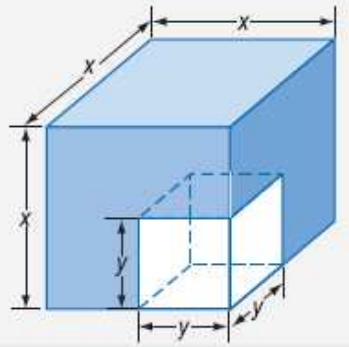
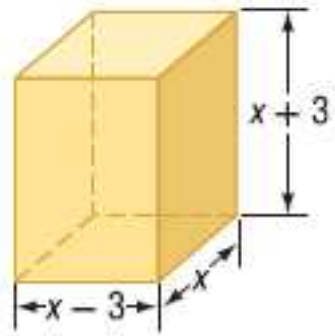
Since 10 is the only real solution, the lengths of the cubes are 10 cm and 20 cm.

GuidedPractice

4. Determine the dimensions of the cubes if the length of the smaller cube is one third of the length of the larger cube, and the volume of the object is 3250 cubic centimeters. **5 cm and 15 cm**

A small cube is cut out of a larger cube. The volume of the remaining figure is given and the dimensions of each cube need to be determined.

This can be accomplished by factoring the cubic polynomial $x^3 - y^3$.



57. GEOMETRY The volume of the figure at the right is 440 cubic centimeters. Find the value of x and the length, height, and width. $x = 8$; 5, 8, 11