أسئلة الجزء الكتابي – 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: 2026-11-15 19:52:26

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

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

المزيد من الملفات بحسب الصف التاسع العام والمادة رياضيات في الفصل الأول	
1	أسئلة اختيار من متعدد في التعبيرات العددية واللفظية – ريفيل
2	أسئلة الجزء الكتابي – منهاج ريفيل
3	أسئلة اختيار من متعدد في – ريفيل
4	هيكل 9 متقدم ريفيل
5	الهيكل الوزاري المعتمد ريفيل 2027

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

Written Exam

Free Response Questions 21–26 · Grade 9 General · Reveal · Show all your steps

Q	Learning outcome	Lesson	Reveal (English)	Page
21	Evaluate algebraic expressions using the order of operations	Lesson 1-2	(42-50)	19
22	Solve equations for specific variables	Lesson 2-7	(19-22)	125
23	Variable on each side; identities and no solution	Lesson 2-4	(1-16), Ex 6, Ex 7, (25-39)	96-99
24	Graph linear functions by making tables of values	Lesson 4-1	(5-8)	215
25	Identify and graph piecewise-defined functions	Lesson 4-6	(1-6)	263
26	Construct arithmetic sequences; apply the formula	Lesson 4-5	(9-22)	255

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

42. $g + 6t$	**43.** $7 - gr$	**44.** $r^2 + (g^3 - 8)^5$

Hint

Substitute the values first.

Order of operations:

1) Parentheses

2) Exponents

3) × and ÷ (left to right)

4) + and – (left to right)

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

45. $(2t + 3g) \div 4$	**46.** $t^2 + 8rt + r^2$	**47.** $3g(g + r)^2 - 1$

Hint

Substitute the values first.

Order of operations:

1) Parentheses

2) Exponents

3) × and ÷ (left to right)

4) + and – (left to right)

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

Hint

Substitute the values first.

Order of operations:

1) Parentheses

2) Exponents

3) × and ÷ (left to right)

4) + and – (left to right)

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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.

Hint

Use inverse operations to isolate the variable.

Then substitute the given values.

$P = 2\ell + 2w$

$V = \ell wh$

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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?

Hint

Use inverse operations to isolate the variable.

Then substitute the given values.

$P = 2\ell + 2w$

$V = \ell wh$

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21. SHOPPING Thomas bought video games for $13.50 each and controllers. The total amount he spent is c = 13.50g + p, where c is the total cost, g is the number of games, and p is the cost of the controllers. The controllers cost $55 and Thomas spent $136 in total.

a. Solve the equation for g.

b. Find how many games Thomas bought.

Hint

Use inverse operations to isolate the variable.

Then substitute the given values.

$P = 2\ell + 2w$

$V = \ell wh$

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?

Hint

Use inverse operations to isolate the variable.

Then substitute the given values.

$P = 2\ell + 2w$

$V = \ell wh$

23	Variable on each side; identities and no solution (Lesson 2-4)	(1-16), Ex 6, Ex 7, (25-39)	Page 96-99

Solve each equation. Check your solution.

1. $7c + 12 = -4c + 78$	**2.** $2m - 13 = -8m + 27$	**3.** $9x - 4 = 2x + 3$

Hint

1) Distribute.

2) Collect variables on one side.

Variables cancel and:

true (0 = 0) → identity

false (−30 = 20) → no solution

x = number → one solution

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23	Variable on each side; identities and no solution (Lesson 2-4)	(1-16), Ex 6, Ex 7, (25-39)	Page 96-99

Solve each equation. Check your solution.

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

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

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

Hint

1) Distribute.

2) Collect variables on one side.

Variables cancel and:

true (0 = 0) → identity

false (−30 = 20) → no solution

x = number → one solution

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Solve each equation. Check your solution.

7. $2(r + 6) = 4(r + 4)$	**8.** $6(n + 5) = 3(n + 16)$	**9.** $5(g + 8) - 7 = 117 - g$

Hint

1) Distribute.

2) Collect variables on one side.

Variables cancel and:

true ($0 = 0$) → identity

false ($-30 = 20$) → no solution

x = number → one solution

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Solve each equation. Check your solution.

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

11. $3(3m - 2) = 2(3m + 3)$

12. $6(3a + 1) - 30 = 3(2a - 4)$

Hint

1) Distribute.

2) Collect variables on one side.

Variables cancel and:

true (0 = 0) → identity

false (−30 = 20) → no solution

x = number → one solution

23	Variable on each side; identities and no solution (Lesson 2-4)	(1-16), Ex 6, Ex 7, (25-39)	Page 96-99

Solve each equation. Check your solution.

13. $7n + 6 = 4n - 9$	**14.** $-6(2r + 8) = -10(r - 3)$	**15.** $5 - 3(w + 4) = w - 7$

Hint

1) Distribute.

2) Collect variables on one side.

Variables cancel and:

true (0 = 0) → identity

false (−30 = 20) → no solution

x = number → one solution

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Solve each equation. Check your solution.

16. $2x - 5(x - 3) = 2(x - 10)$

Hint

1) Distribute.

2) Collect variables on one side.

Variables cancel and:

true (0 = 0) → identity

false (−30 = 20) → no solution

x = number → one solution

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23	Variable on each side; identities and no solution (Lesson 2-4)	(1-16), Ex 6, Ex 7, (25-39)	Page 96-99

Solve each equation. (Examples 6 and 7, page 96)

Ex 6. $6(y - 5) = 2(10 + 3y)$	**Ex 7.** $7x + 5(x - 1) = 12x - 5$	

Hint

1) Distribute.

2) Collect variables on one side.

Variables cancel and:

true (0 = 0) → identity

false (−30 = 20) → no solution

x = number → one solution

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Solve each equation and state whether the equation has one solution, no solution, or is an identity

25. $-6y - 3 = 3 - 6y$

26. $\frac{1}{2}(x + 6) = \frac{1}{2}x - 9$

27. $8q + 12 = 4(3 + 2q)$

Hint

1) Distribute.

2) Collect variables on one side.

Variables cancel and:

true (0 = 0) → identity

false (−30 = 20) → no solution

x = number → one solution

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Solve each equation and state whether the equation has one solution, no solution, or is an identity

28. $21(x + 1) - 6x = 15x + 21$	**29.** $12y + 48 - 4y = 8(y - 6)$	**30.** $8(z + 6) = 4(2z + 12)$

Hint

1) Distribute.

2) Collect variables on one side.

Variables cancel and:

true (0 = 0) → identity

false (−30 = 20) → no solution

x = number → one solution

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Solve each equation and state whether the equation has one solution, no solution, or is an identity

31. $2a + 2 = 3(a + 2)$

32. $\frac{1}{4}x + 5 = \frac{1}{4}x$

33. $7(c + 9) = 7c + 63$

Hint

1) Distribute.

2) Collect variables on one side.

Variables cancel and:

true (0 = 0) → identity

false (−30 = 20) → no solution

x = number → one solution

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Solve each equation and state whether the equation has one solution, no solution, or is an identity

34. $4k + 3 = \frac{1}{4}(8k + 16)$

35. $3b - 13 + 4b = 7b + 1$

36. $\frac{1}{2}(\frac{1}{2}m - 8) = \frac{1}{4}(m - 16)$

Hint

1) Distribute.

2) Collect variables on one side.

Variables cancel and:

true (0 = 0) → identity

false (−30 = 20) → no solution

x = number → one solution

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Mixed Exercises — Solve each equation. Check your solution.

37. $2x = 2(x - 3)$

38. $\frac{2}{5}h - 7 = \frac{12}{5}h - 2h + 3$

39. $-5(3 - q) + 4 = 5q - 11$

Hint

1) Distribute.

2) Collect variables on one side.

Variables cancel and:

true (0 = 0) → identity

false (−30 = 20) → no solution

x = number → one solution

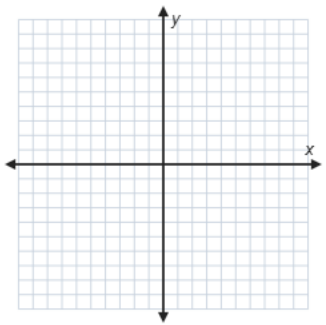
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Graph each equation by making a table.

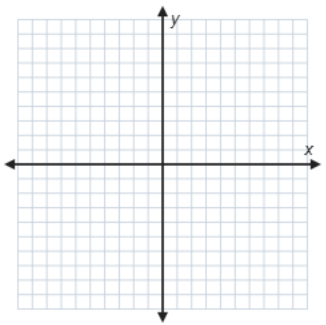
5. $y - 8 = -x$

x	y



6. $x = 10 - y$

x	y



Hint

1) Solve for y.

2) Choose x-values: −2, 0, 2

3) Find each y-value.

4) Plot the points.

5) Draw the line.

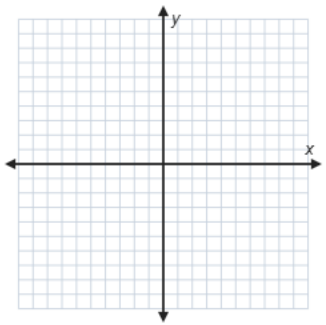
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Graph each equation by making a table.

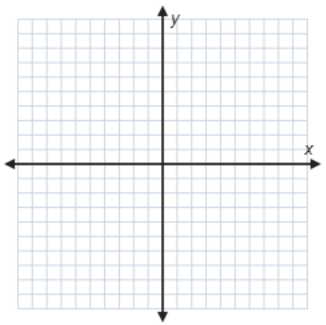
7. $y = \frac{1}{2}x + 1$

x	y



8. $y + 2 = \frac{1}{4}x$

x	y



Hint

1) Solve for y.

2) Choose x-values: −2, 0, 2

3) Find each y-value.

4) Plot the points.

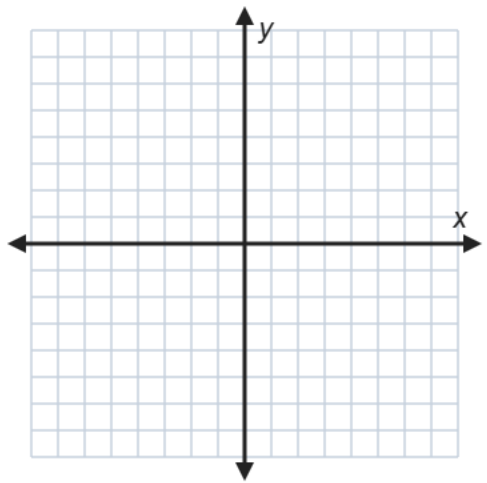
5) Draw the line.

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Graph each function. State the domain and range.

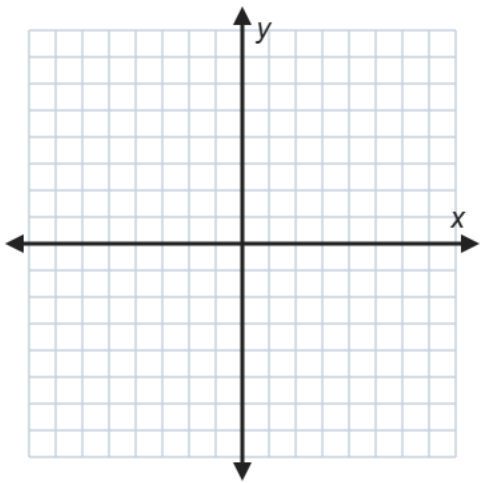
1. $f(x) = \begin{cases} \frac{1}{2}x - 1 \text{ if } x > 3 \\ -2x + 3 \text{ if } x \le 3 \end{cases}$



Domain: _____

Range: _____

2. $f(x) = \begin{cases} 2x - 5 \text{ if } x > 1 \\ 4x - 3 \text{ if } x \le 1 \end{cases}$



Domain: _____

Range: _____

Hint

Graph each piece only on its interval.

≤ or ≥ → closed dot ●

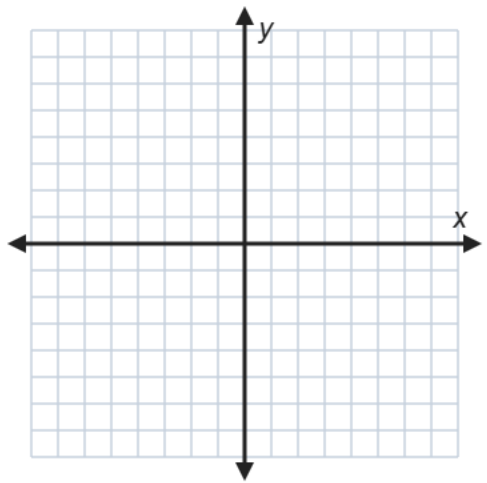
< or > → open dot ○

Domain: all x-values used

Range: all y-values reached

Graph each function. State the domain and range.

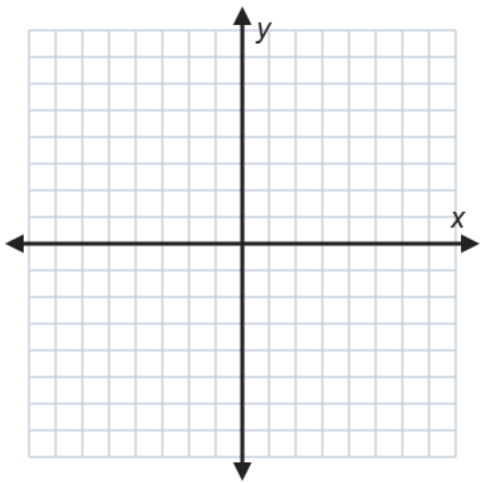
3. $f(x) = \begin{cases} 2x + 3 \text{ if } x \geq -3 \\ -\frac{1}{3}x + 1 \text{ if } x < -3 \end{cases}$



Domain: _____

Range: _____

4. $f(x) = \begin{cases} 3x + 4 \text{ if } x \geq 1 \\ x + 3 \text{ if } x < 1 \end{cases}$



Domain: _____

Range: _____

Hint

Graph each piece only on its interval.

≤ or ≥ → closed dot ●

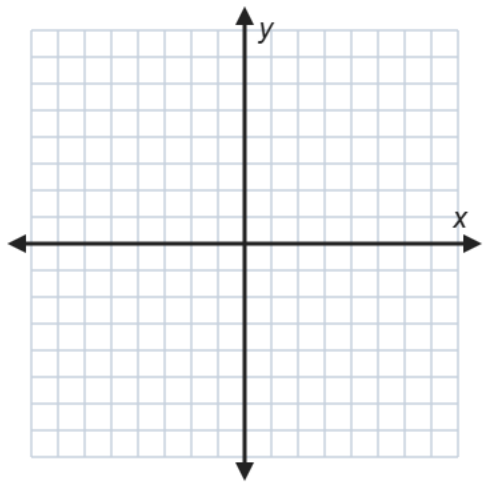
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Domain: all x-values used

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Graph each function. State the domain and range.

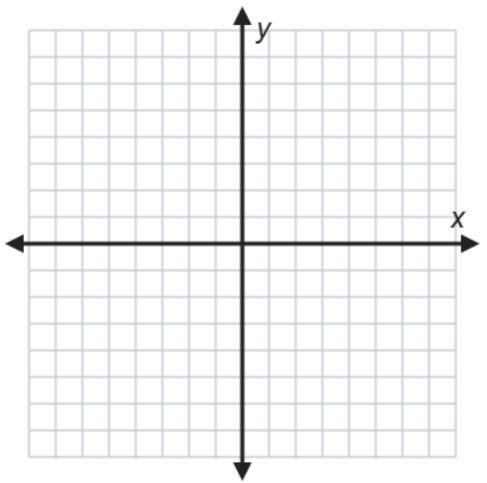
5. $f(x) = \begin{cases} 3x + 2 \text{ if } x > -1 \\ -\frac{1}{2}x - 3 \text{ if } x \le -1 \end{cases}$



Domain: _____

Range: _____

6. $f(x) = \begin{cases} 2x + 1 \text{ if } x < -2 \\ -3x - 1 \text{ if } x \ge -2 \end{cases}$



Domain: _____

Range: _____

Hint

Graph each piece only on its interval.

≤ or ≥ → closed dot ●

< or > → open dot ○

Domain: all x-values used

Range: all y-values reached

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

9. 0.02, 1.08, 2.14, 3.2, ...	**10.** 6, 12, 18, 24, ...	**11.** 21, 19, 17, 15, ...

Hint

$d = a_2 - a_1$

Next term = previous term + d

$a_n = a_1 + (n - 1)d$

$a_7 = a_1 + 6d$

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

12. $-\frac{1}{2}, 0, \frac{1}{2}, 1, \ldots$

13. $2\frac{1}{3}, 2\frac{2}{3}, 3, 3\frac{1}{3}, \ldots$

14. $\frac{7}{12}, 1\frac{1}{3}, 2\frac{1}{12}, 2\frac{5}{6}, \ldots$

Hint

$d = a_2 - a_1$

Next term = previous term + d

$a_n = a_1 + (n - 1)d$

$a_7 = a_1 + 6d$

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

15. 3, 7, 11, 15, ...	**16.** 22, 19.5, 17, 14.5, ...	**17.** −13, −11, −9, −7, ...

Hint

$d = a_2 - a_1$

Next term = previous term + d

$a_n = a_1 + (n - 1)d$

$a_7 = a_1 + 6d$

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

18. $-2, -5, -8, -11, \ldots$		

Hint

$d = a_2 - a_1$

Next term = previous term + d

$a_n = a_1 + (n - 1)d$

$a_7 = a_1 + 6d$

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Use the given arithmetic sequence to write an equation and then find the 7th term of the sequence

19. $-3, -8, -13, -18, \ldots$	**20.** $-2, 3, 8, 13, \ldots$	**21.** $-11, -15, -19, -23, \ldots$

Hint

$d = a_2 - a_1$

Next term = previous term + d

$a_n = a_1 + (n - 1)d$

$a_7 = a_1 + 6d$

Use the given arithmetic sequence to write an equation and then find the 7th term of the sequence

22. $-0.75, -0.5, -0.25, 0, \ldots$

Hint

$d = a_2 - a_1$

Next term = previous term + d

$a_n = a_1 + (n - 1)d$

$a_7 = a_1 + 6d$

Answer Key (final answers)

Q21 · 42 68	**Q21 · 43** 1	**Q21 · 44** 9
Q21 · 45 7	**Q21 · 46** 394	**Q21 · 47** 149
Q21 · 48 4080	**Q21 · 49** 16 1/4	**Q21 · 50** 97/31 ≈ 3.13
Q22 · 19 a. $\ell = (P - 2w)/2$ b. 14 m	**Q22 · 20** a. $b = h/a$ b. 120 times	**Q22 · 21** a. $g = (c - p)/13.50$ b. 6 games
Q22 · 22 a. $h = V/(\ell w)$ b. 2.5 m	**Q23 · 1** $c = 6$	**Q23 · 2** $m = 4$
Q23 · 3 $x = 1$	**Q23 · 4** $t = 4$	**Q23 · 5** $b = -2$
Q23 · 6 $v = 12/5$	**Q23 · 7** $r = -2$	**Q23 · 8** $n = 6$
Q23 · 9 $g = 14$	**Q23 · 10** $x = -5$	**Q23 · 11** $m = 4$
Q23 · 12 $a = 1$	**Q23 · 13** $n = -5$	**Q23 · 14** $r = -39$
Q23 · 15 $w = 0$	**Q23 · 16** $x = 7$	**Q23 · Ex 6** no solution
Q23 · Ex 7 identity	**Q23 · 25** no solution	**Q23 · 26** no solution

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Answer Key (final answers)

Q23 · 27 identity

Q23 · 28 identity

Q23 · 29 no solution

Q23 · 30 identity

Q23 · 31 one solution: a = −4

Q23 · 32 no solution

Q23 · 33 identity

Q23 · 34 one solution: k = 1/2

Q23 · 35 no solution

Q23 · 36 identity

Q23 · 37 no solution

Q23 · 38 no solution

Q23 · 39 identity

Q24 · 5 y = −x + 8; e.g. (0, 8), (2, 6), (8, 0)

Q24 · 6 y = 10 − x; e.g. (0, 10), (4, 6), (10, 0)

Q24 · 7 e.g. (−2, 0), (0, 1), (2, 2)

Q24 · 8 y = (1/4)x − 2; e.g. (0, −2), (4, −1), (8, 0)

Q25 · 1 D: all real numbers; R: y ≥ −3

Q25 · 2 D: all real numbers; R: all real numbers

Q25 · 3 D: all real numbers; R: y ≥ −3

Q25 · 4 D: all real numbers; R: y < 4 or y ≥ 7

Q25 · 5 D: all real numbers; R: y ≥ −2.5

Q25 · 6 D: all real numbers; R: y ≤ 5

Q26 · 9 d = 1.06; 4.26, 5.32, 6.38

Q26 · 10 d = 6; 30, 36, 42

Q26 · 11 d = −2; 13, 11, 9

Q26 · 12 d = 1/2; 3/2, 2, 5/2

Q26 · 13 d = 1/3; 3 2/3, 4, 4 1/3

Q26 · 14 d = 3/4; 3 7/12, 4 1/3, 5 1/12

Q26 · 15 d = 4; 19, 23, 27

Q26 · 16 d = −2.5; 12, 9.5, 7

Q26 · 17 d = 2; −5, −3, −1

Q26 · 18 d = −3; −14, −17, −20

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Answer Key (final answers)

Q26 · 19 $a_n = -5n + 2$; $a_7 = -33$

Q26 · 20 $a_n = 5n - 7$; $a_7 = 28$

Q26 · 21 $a_n = -4n - 7$; $a_7 = -35$

Q26 · 22 $a_n = 0.25n - 1$; $a_7 = 0.75$

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