7th Grade Review

7.1a

1. Use your knowledge of powers of ten to complete the table below.

Exponential Form	Expanded Form	Fraction Form
10^{-4}		
	$\frac{1}{10} \times \frac{1}{10} \times \frac{1}{10}$	
		$\frac{1}{100}$

2. Mrs. Austin asked students to complete the following table for homework. When she checked Jacob's homework, Mrs. Austin noticed that he wrote the incorrect fraction for each power of ten.

Exponential Form	Fraction Form	Decimal Form
10^{-5}	$\frac{1}{10000}$	0.00001
10^{-4}	$\frac{1}{1000}$	0.0001
10^{-3}	$\frac{1}{100}$	0.001
10^{-2}	$\frac{1}{10}$	0.01
10^{-1}	$\frac{1}{1}$	0.01

Write the correct fractions on the table and a short explanation of some patterns or general rules Jacob can use to determine the fraction form of powers of ten in the future.

3. Identify each statement that is equivalent to 10^{-3}

1,000	$\frac{1}{10^3}$	-3,000	0.001
$\frac{1}{300}$	-0.003	$\frac{1}{10} \times \frac{1}{10} \times \frac{1}{10}$	$\frac{-1}{10^3}$

4. Which is equivalent to 10^{-5}?

A. $\frac{-1}{10^5}$ and -0.00005

B. $\frac{1}{10^5}$ and 0.00005

C. $\frac{-1}{10^5}$ and -0.00001

D. $\frac{1}{10^5}$ and 0.00001

5. Which of the following is a true statement?

A. $10^0 = 1$

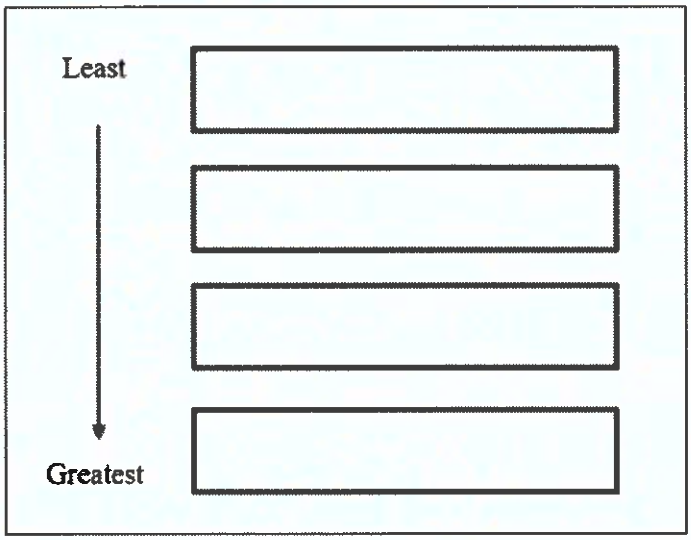
B. $10^{-1} = 0.01$

C. $10^{-2} = 0.02$

D. $10^{-3} = 0.03$

7.1b

1. Put the following numbers in order from least to greatest.



9.4×10^{-3}

2.7×10^{-4}

1.45×10^{-3}

8.35×10^{-5}

2. Write 31 million, 4 hundred and fifty-two thousand in standard form. Then, convert the number into scientific notation.

Standard Form Scientific Notation

3. Circle all of the numbers that make the inequality statement true.

$3.5\times10^{3} <$ _____ $< 7.4\times10^{6}$

1.85×10^{4} 5.3×10^{2} 4.12×10^{3} 6.4×10^{7}

3.2×10^{3} 9.87×10^{5} 7.4×10^{4} 8.1×10^{6}

4. What is 0.00000283 written in scientific notation?

   A. 2.83×10^{-8}
   B. 2.83×10^{-6}
   C. 2.83×10^{6}
   D. 2.83×10^{8}

5. Which list of numbers is written in descending order?

A. $3.29\times10^{4}, 5.2\times10^{2}, 7.1\times10^{4}$

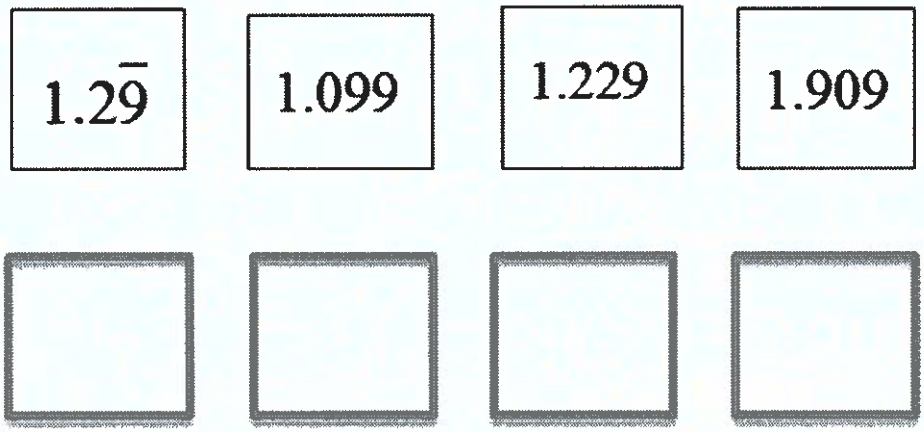
B. $5.2\times10^{2}, 3.29\times10^{4}, 7.1\times10^{4}$

C. $7.1\times10^{4}, 5.2\times10^{2}, 3.29\times10^{4}$

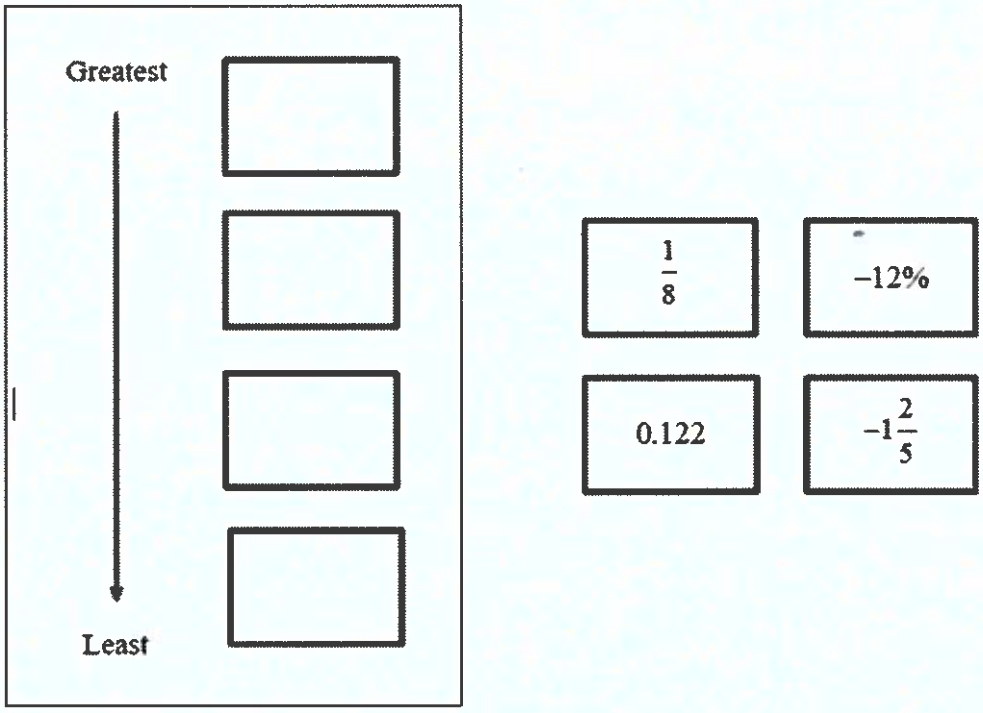
D. $7.1\times10^{4}, 3.29\times10^{4}, 5.2\times10^{2}$

7.1c

1. Put the following numbers in ascending order.



2. Put the following numbers in order from greatest to least.



3. Circle all of the numbers that make the inequality statement true.

$$0.23 < ____ < 74\%$$

$\frac{2}{5}$	32%	$\frac{3}{4}$	$0.7\overline{4}$	23%
$0.2\overline{3}$	$1\frac{2}{3}$	$\frac{2}{9}$	0.458	$\frac{4}{7}$

4. Which set of numbers is listed in descending order?

A. $-66\%, -0.45, -\frac{1}{3}, 1.8$

B. $-66\%, -\frac{1}{3}, -0.45, 1.8$

C. $1.8, -66\%, -0.45, -\frac{1}{3}$

D. $1.8, -\frac{1}{3}, -0.45, -66\%$

5. Which list of numbers is written in ascending order?

A. $35\%, 3.5, \frac{3}{5}$

B. $3.5, 35\%, \frac{3}{5}$

C. $35\%, \frac{3}{5}, 3.5$

D. $\frac{3}{5}, 35\%, 3.5$

7.1d

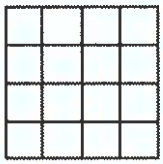
1. Identify the two perfect squares listed below.

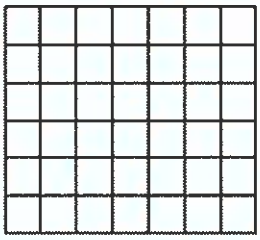
10	24	64	163	200	265	361

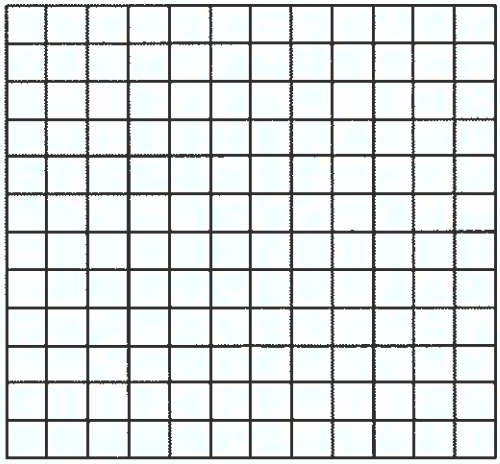
2. Use your knowledge of perfect squares and square roots to complete the table below.

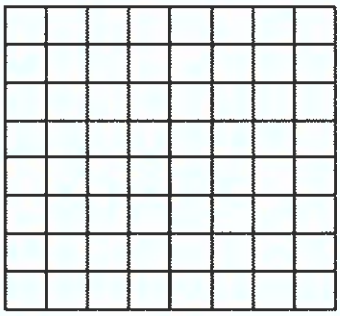
Square Root	Perfect Square
	4
3	
	16
	121
15	
	400

3. Which of the following pictures does *not* represent a perfect square?

A. 

C. 

B. 

D. 

4. Which of the following represents $\sqrt{196}$?

   A. 13
   B. 14
   C. 15
   D. 16

5. What is $\sqrt{9}$?

   A. 3
   B. 6
   C. 18
   D. 81

6. Which of the following has a square root of 16?

   A. 4
   B. 32
   C. 186
   D. 256

7.1e

1. Represent $|6|$ and $|-6|$ on the number line below.

2. What is the absolute value of zero? ____

   Why? _____

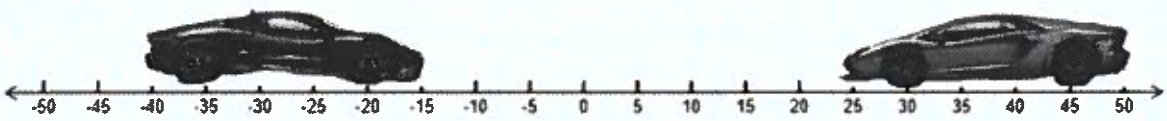
   _____

3. Identify each true statement.

$\|6\| = -6$	$8.2 = \|-8.2\|$	$-4 = \|4\|$
$\|-3.5\| = -3.5$	$\|9\| = -9$	$\|-1.8\| = 1.8$

4. Evaluate the expression $-|-9|$ and write your answer in the space provided. _____

5. Two cars are parked on the number line below. The front of the blue car is parked at point -15 and the front of the red car is parked at point 25. At which point on the number line below should the front of the red car drive to in order to have the same absolute value as the blue car?

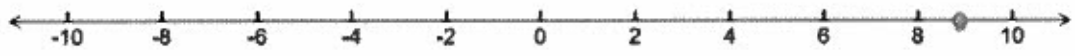


   The red car must drive to point _____.

6. Absolute value is –

   A. the distance from the number and zero on a number line.
   B. represented with the symbols | |.
   C. always positive.
   D. all of the above.

7. Which point on the number lines below represents the greatest absolute value?

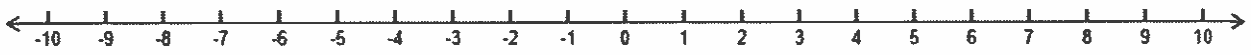
A.


B.

C.

D.

8. Draw two points on the number line below that represent the absolute value of nine.



9. The absolute value of -23 is –

   A. -23, because the absolute value of a number is that number
   B. 23, because the absolute value of a number is the number's distance from zero
   C. 23, because absolute value is the opposite of a given number
   D. 0, because the absolute value of a number is the sum of that number and its opposite

7.2

1. **Five bags of apples were sold to a family of four. Each bag held six apples. If each family member ate three apples, what fraction of the original apples is left?**

2. **Caleb bought a pizza. He quickly ate $\frac{1}{4}$ of it. He gave $\frac{1}{2}$ of what was left to Karen. Select all of the following that show how much Karen received.**

$\frac{1}{8}$	0.75	37.5%
0.125	0.375	$\frac{1}{4}$
$\frac{3}{8}$	3.75%	12.5%

3. **Kerry charges $25.50 per lawn to cut grass on Saturdays and $28.50 per lawn to cut grass on Sundays. If she cuts 4 lawns on Saturday and 5 lawns on Sunday, how much money will she earn?**
   - **A.** $102
   - **B.** $171
   - **C.** $241.50
   - **D.** $244.50

4. **Mrs. Whitaker had a bag of 28 marbles. If $\frac{1}{4}$ of the marbles were red and $\frac{3}{7}$ were yellow, how many marbles were neither red nor yellow?**
   - **A.** 7
   - **B.** 9
   - **C.** 12
   - **D.** 19

7.3

1. **A scale drawing of a rectangular field is shown, with a scale of 15 yards = 1 inch.**

Find the actual lengths of the sides of the field

2. **The ratio of boys to girls in the schools' math team is six to seven. Which combinations of boys and girls could the team have?**

Select the statements that correctly match this ratio.

Twelve Boys Fourteen Girls	Twelve Boys Twenty-one Girls	Eighteen Boys Twenty-one Girls
Eighteen Boys Fourteen Girls	Twenty-four Boys Twenty-eight Girls	Twenty-four Boys Twenty-one Girls

3. **Travis is making a scale model of his home. The actual home is 45 feet long and 35 feet wide. Travis wants his model to be 15 inches in length. Which could be used to find the width of his model if he uses the same ratio?**

   A. $\frac{45}{15} = \frac{x}{35}$

   B. $\frac{45}{15} = \frac{35}{x}$

   C. $\frac{15}{45} = \frac{35}{x}$

   D. $\frac{35}{45} = \frac{15}{x}$

4. **The regular price of a burger meal at a certain restaurant is $8.70. It is on sale for a 20% discount. What is the sale price of the hamburger meal?**

   A. $1.74

   B. $6.96

   C. $7.83

   D. $10.44

7.10a

1. On Monday, Richard worked for 4 hours and earned \$36. On Tuesday, Richard worked for 6 hours and earned \$54. On Wednesday, Richard worked for 5 hours and earned \$45.

   Are his earnings proportional?

   What is the rate of change for his earnings?

   Represent his earnings in a $y = mx$ function, where hours are represented by x and earnings are represented by y, and m represents the rate of change.

   If Richard worked for 7 hours on Thursday, how much money would he earn?

   How many hours did Richard work on Friday, when he earned \$81

2. Given:

x	y
2	2.2
4	4.4
6	6.6

   Which rate of change (m), would represent this proportional relationship?

   A. $m = 0.2$
   B. $m = 1.1$
   C. $m = 2.2$
   D. $m = 2$

3. Given:

x	y
3	6.3
6	12.6
9	18.9

Which equation would represent this proportional relationship?

A. $y = 0.2\,x$
B. $y = 1.1\,x$
C. $y = 2.1x$
D. $y = 2\,x$

4. Which of the following represents a proportional relationship between the x- and y-values?

A.

x	y
1	5
2	6
3	7

B.

x	y
1	1
2	5
3	9

C.

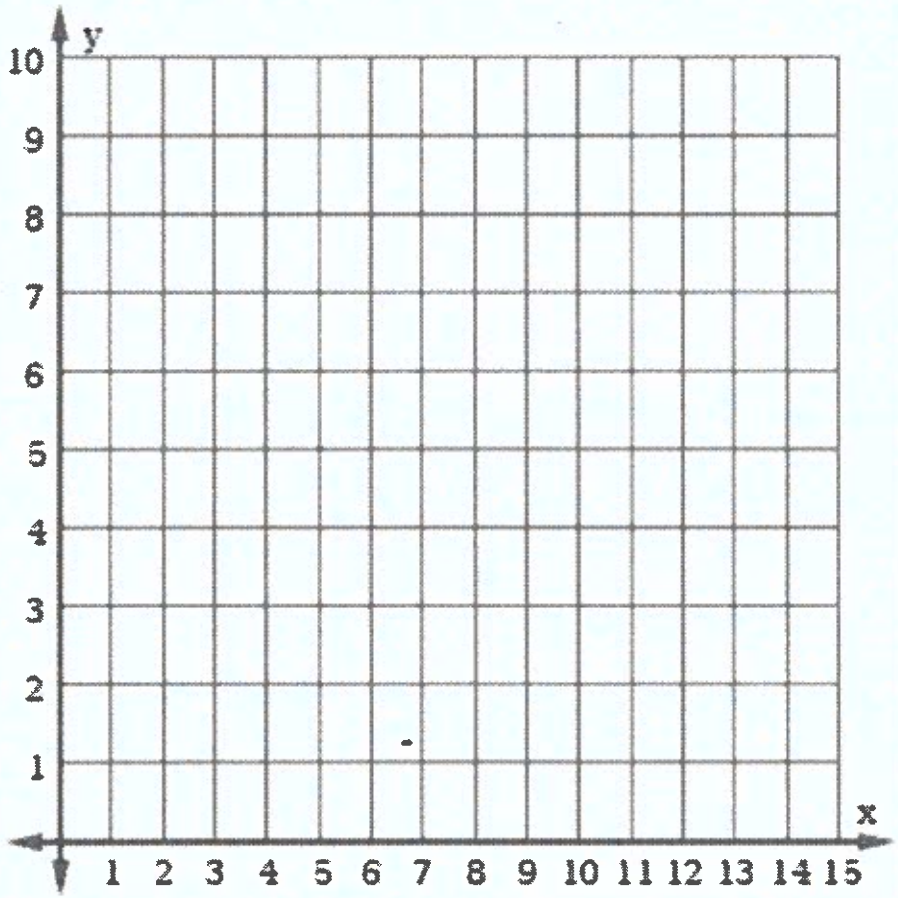
x	y
2	3
4	5
6	7

D.

x	y
2	3
4	6
6	9

7.10b

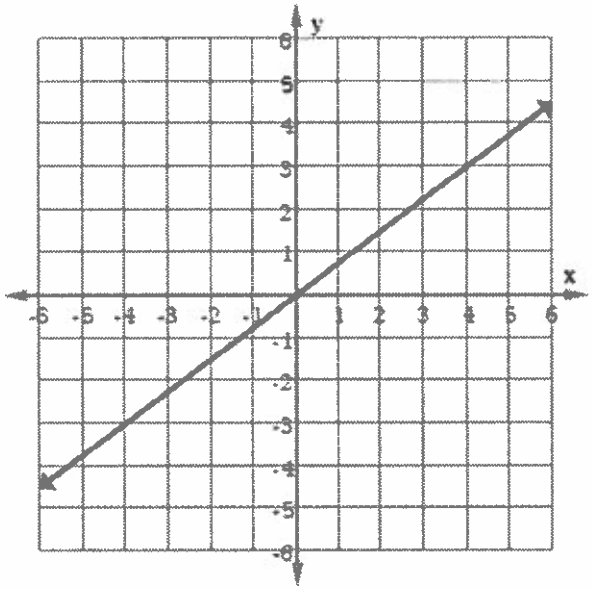
1. A line passes through (5, 3) with a slope of $\frac{3}{5}$. Plot at least 3 points on this line.



2. Select three points that lie on the graph of the line $y = \frac{1}{2}x$.

(0, 0)	(1, 2)	(3, 6)
(4, 2)	(10, 5)	(4, 8)

3. Which of the following equations represents the same proportional relationship shown in the graph?



A. $y = \frac{4}{3}x$

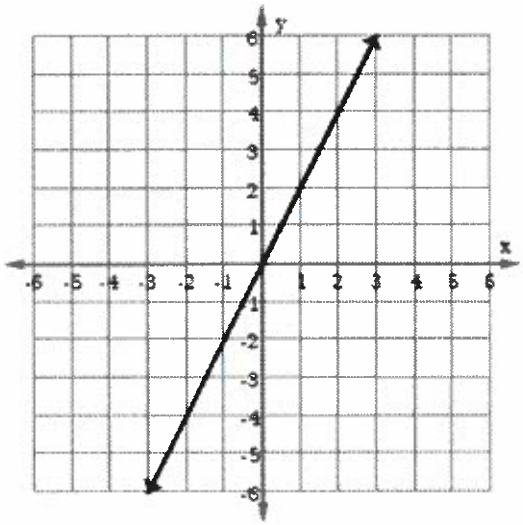
B. $y = \frac{3}{4}x$

C. $y = 3x$

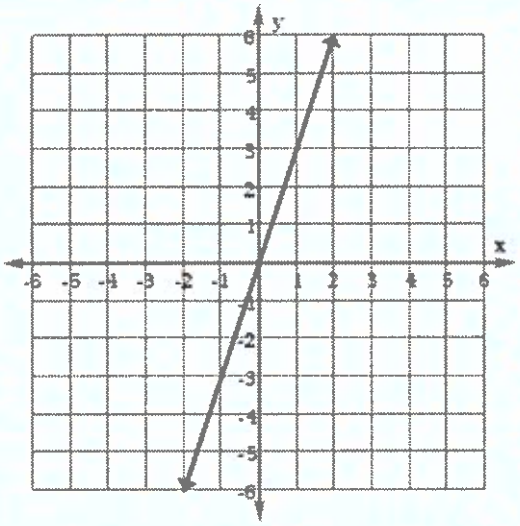
D. $y = 4x$

4. Which of the following graphs represents $y = \frac{2}{3}x$?

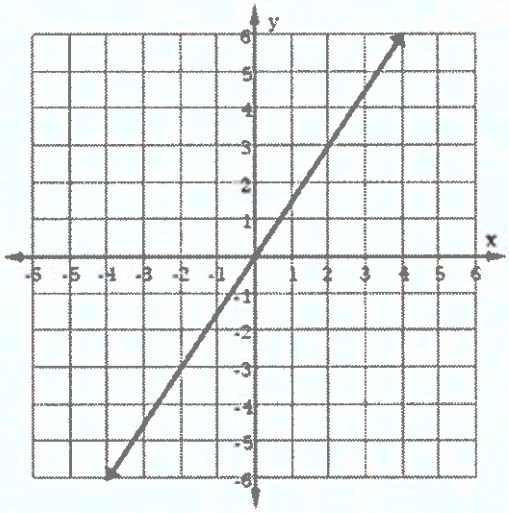
A.



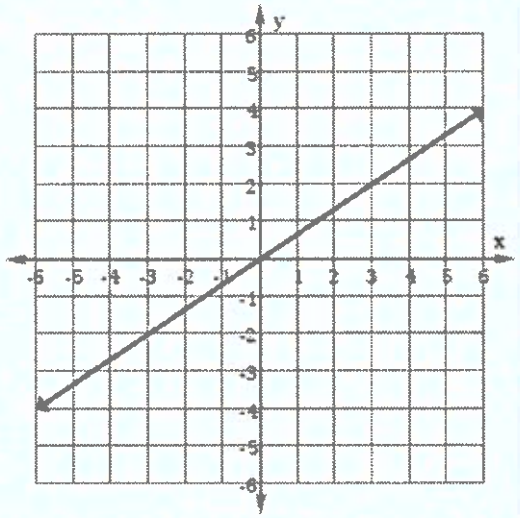
B.



C.



D.



7.10c

1. Maria has 3 ceramic cats. She plans to buy some more. Write an equation in the form of $y = x + b$, $b \neq 0$ that could represent the total number of cats, when given the number of new cats.

2. The table below shows the relationship between x and y.

x	y
-2	-6
-1	-5
1	-3
2	-2

What is the y-intercept for this relationship?

3. The table below shows the relationship between x and y.

x	0	4	12
y	6	10	18

a. Create a verbal description to a practical problem that represents the relationship between x and y
b. What is the y- intercept?
c. Write an equation in the form of $y = x + b$, $b \neq 0$

4. The table shows the relationship between Ky's age and Lu's age.

Lu's Age	1	4	10
Ky's Age	8	11	17

Which equation could be used to determine Ky's age, when given Lu's age.

A. $y = 8x$
B. $y = x + 7$
C. $y = 2x + 6$
D. $y = \frac{1}{2}x + 7.5$

5. The table below shows the relationship between x and y.

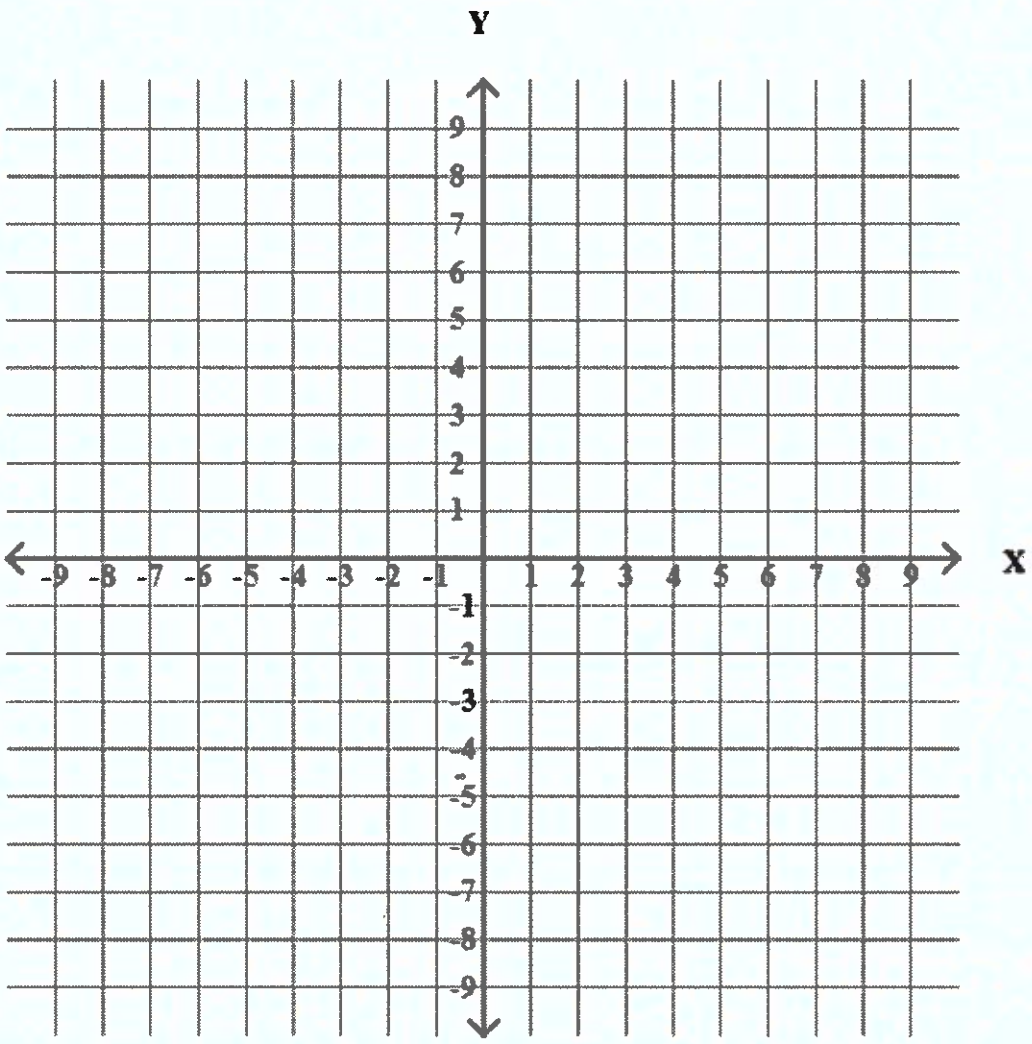
x	-3	2	5
y	-4	1	4

Which could be used to represent the relationship between x and y?

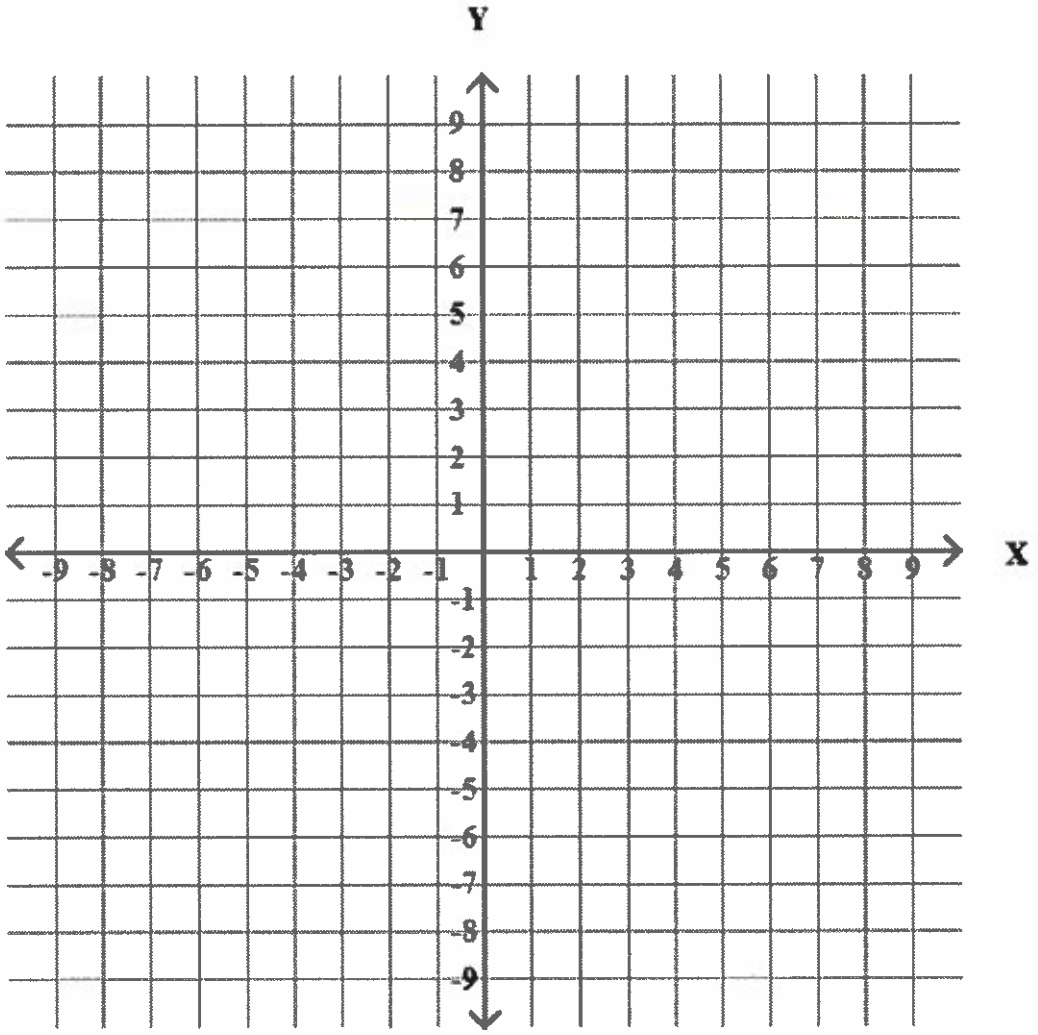
A. $y = \frac{1}{2}x$
B. $y = x + 1$
C. $y = x - 1$
D. $y = 2x - 1$

7.10d

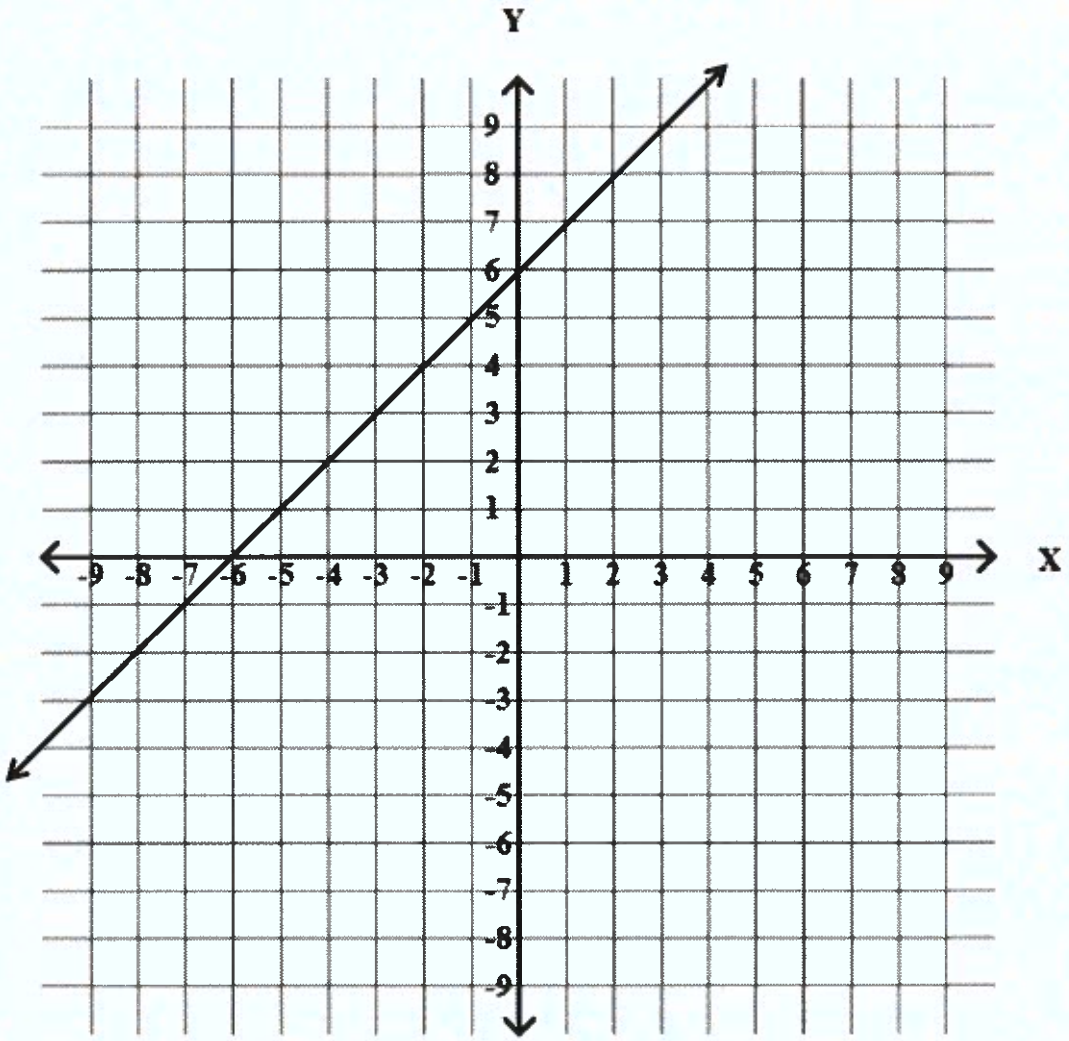
1. Graph the line that passes through the point (3, -1) and has a y-intercept of -4.



2. Graph the line $y = x - 3$



3.

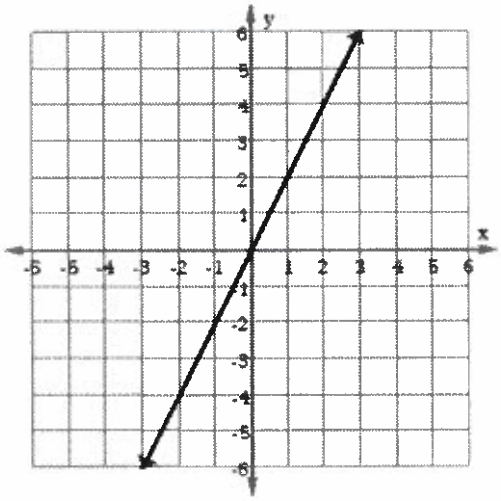


Which equation represents the same relationship shown in the graph?

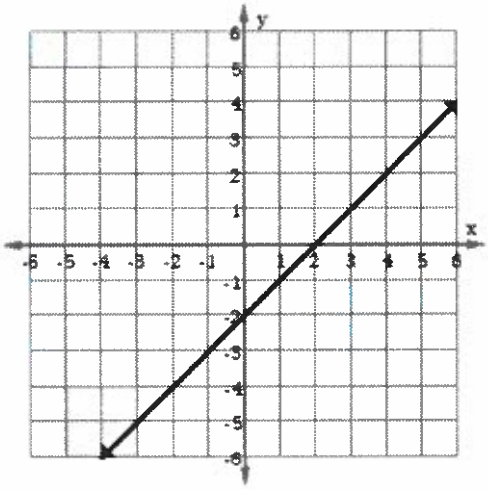
A. $y = x - 6$
B. $y = x + 6$
C. $y = 6x$
D. $y = -6x$

4. Which of the following graphs represents $y = x - 2$?

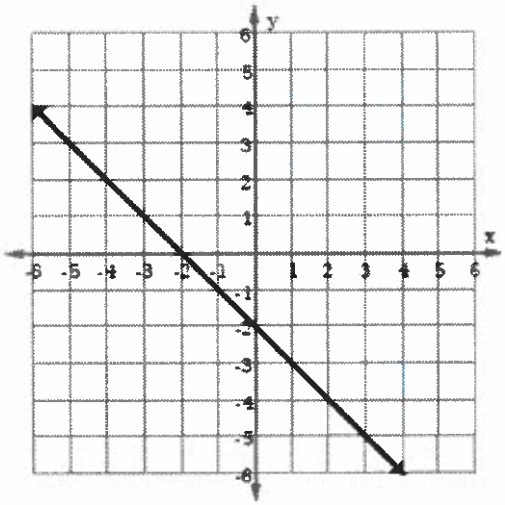
A.



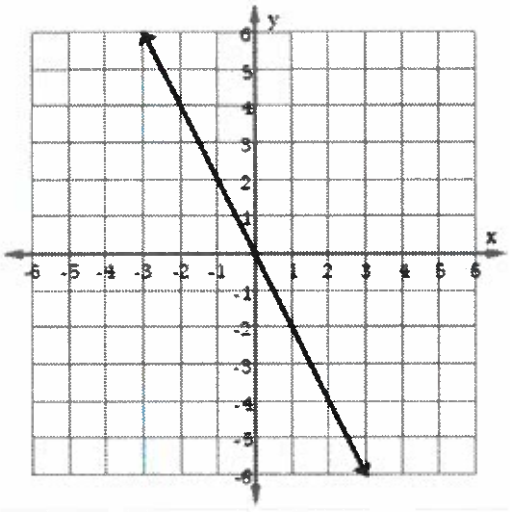
B.



C.



D.

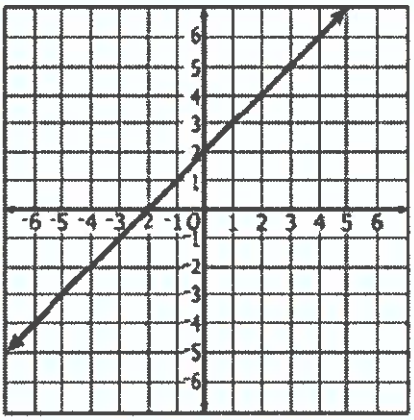


7.10e

1. Steven went to play video games in Games Galore arcade. Games Galore charges $1.50 for each game played. Represent the relationship between total cost, *y*, and number of games played, *x* using a table, graph and equation. Is this relationship a proportional or additive relationship? Explain.

2. Sam went to play video games in Video Game Central arcade. Video Game Central charges $10 to get into the arcade and then $1 per game played. Represent the relationship between total cost, *y*, and number of games played, *x* using a table, graph and equation. Is this relationship a proportional or additive relationship? Explain.

3. The graph represents which table of ordered pairs?



A.

x	y
-3	-5
-1	-3
2	0
4	2

B.

x	y
2	-2
4	0
-1	-3
-3	5

C.

x	y
-2	-4
0	-2
3	1
5	5

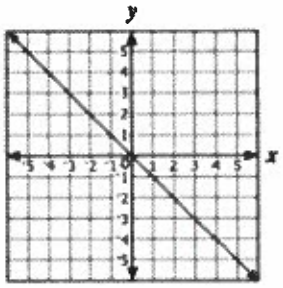
D.

x	y
-4	-2
-2	0
1	3
3	5

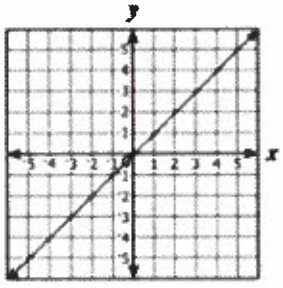
4. Which graph best corresponds to this table of ordered pairs?

x	y
-2	-2
-1	-1
1	1
2	2

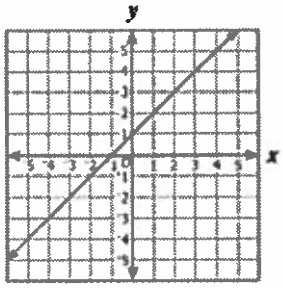
Graph A



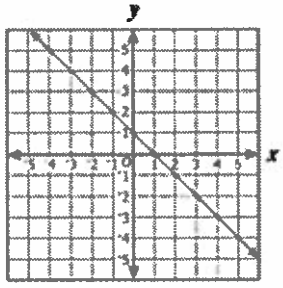
Graph B



Graph C

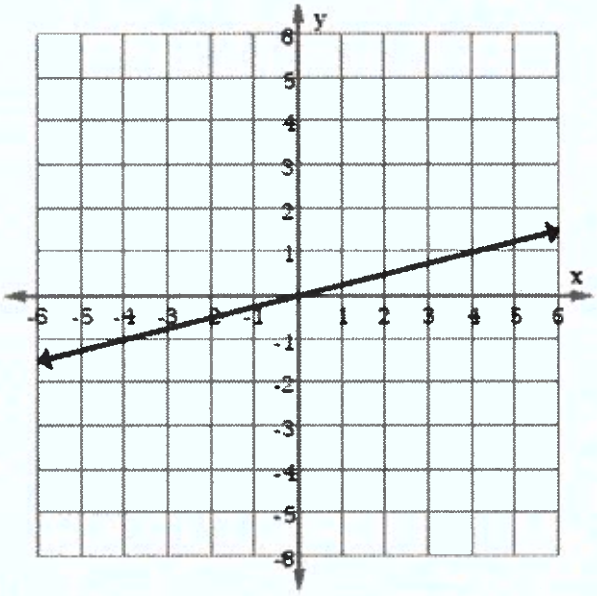


Graph D



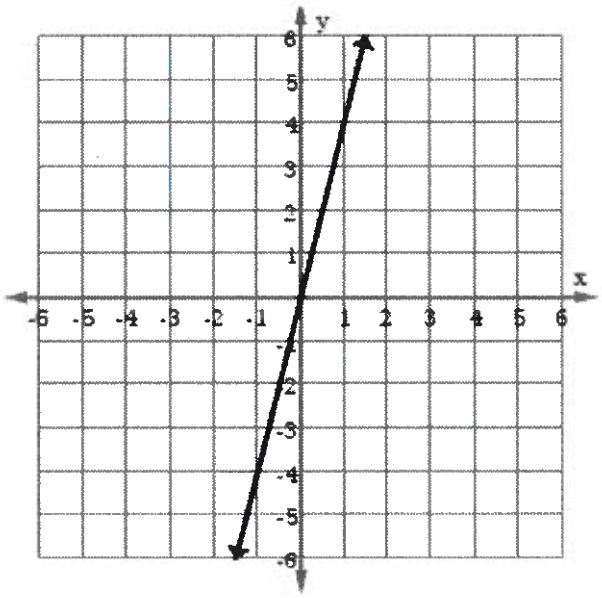
5. Which of the following graph represents the same relationship as "y is four more than x"?

A.

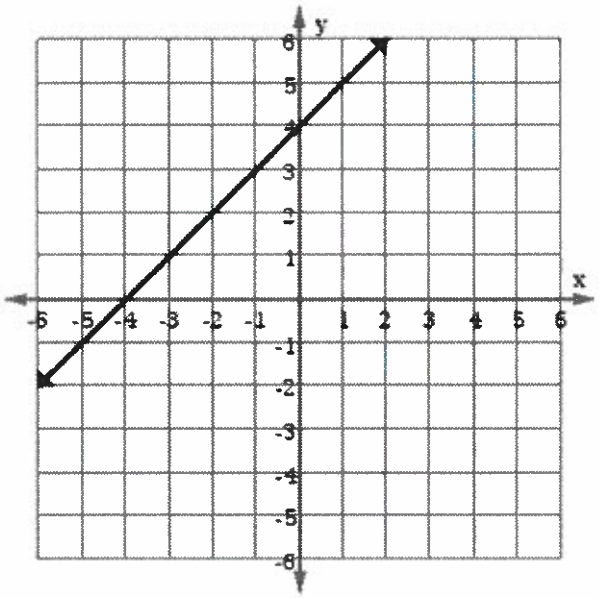


B.

C.


y
x
6
5
4
3
2
1
-1
-2
-3
-4
-5
-6
-6 -5 -4 -3 -2 -1 1 2 3 4 5 6

D.


y
x
6
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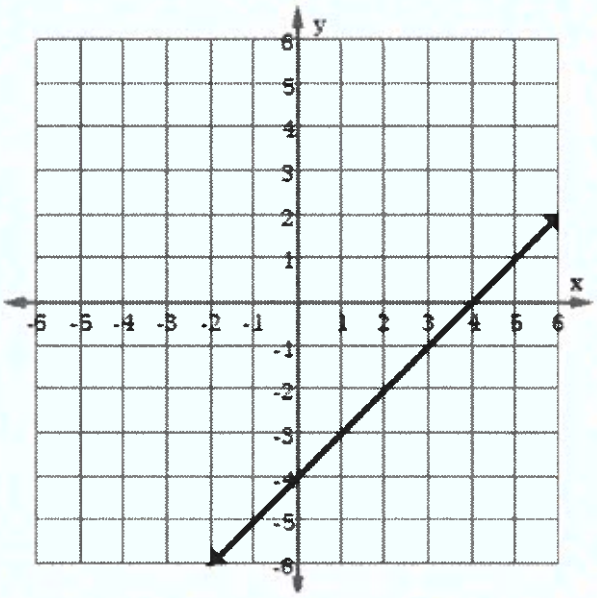
-6
-6 -5 -4 -3 -2 -1 1 2 3 4 5 6


y
x
6
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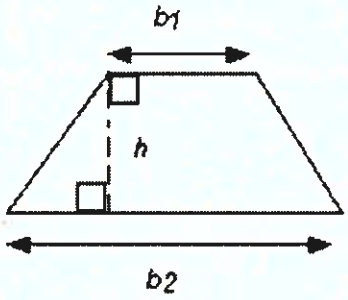
4
3
2
1
-1
-2
-3
-4
-5
-6
-6 -5 -4 -3 -2 -1 1 2 3 4 5 6

7.11

1. What is the area of the trapezoid shown below if $b_1 = 14$, $b_2 = 10$, and $h = 4$?

$$\text{Area} = \frac{1}{2}h(b_1 + b_2)$$



2. What is the value of $10y + 2|3x + 2|$ if $x = -2$ and $y = 3$?

3. What is the value of $x^2 + yz$ if $x = 4$, $y = -3$, and $z = 2$?
   A. 2
   B. 10
   C. 22
   D. 26

4. What is the value of $x^2 + 3x + 2$ if $x = 15$?
   A. 62
   B. 77
   C. 272
   D. 276

5. The outside temperature is 10 degrees Celsius. Using the formula $F = 1.8C + 32$, what is that temperature in degrees Fahrenheit?
   A. 17.8 degrees Fahrenheit
   B. 33.8 degrees Fahrenheit
   C. 50.0 degrees Fahrenheit
   D. 57.6 degrees Fahrenheit

7.12

1. Patti wants to solve for x in the equation.

$$\frac{x}{8}+2=5$$

What steps should she take to solve the equation for x?

2. Look at the following algebraic expression.

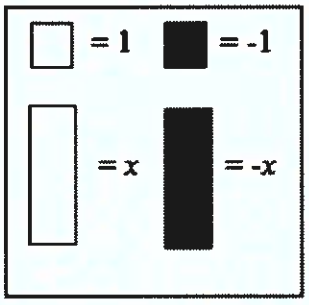
$$3x-8$$

Write at least two different verbal expressions that represent the given algebraic expression.

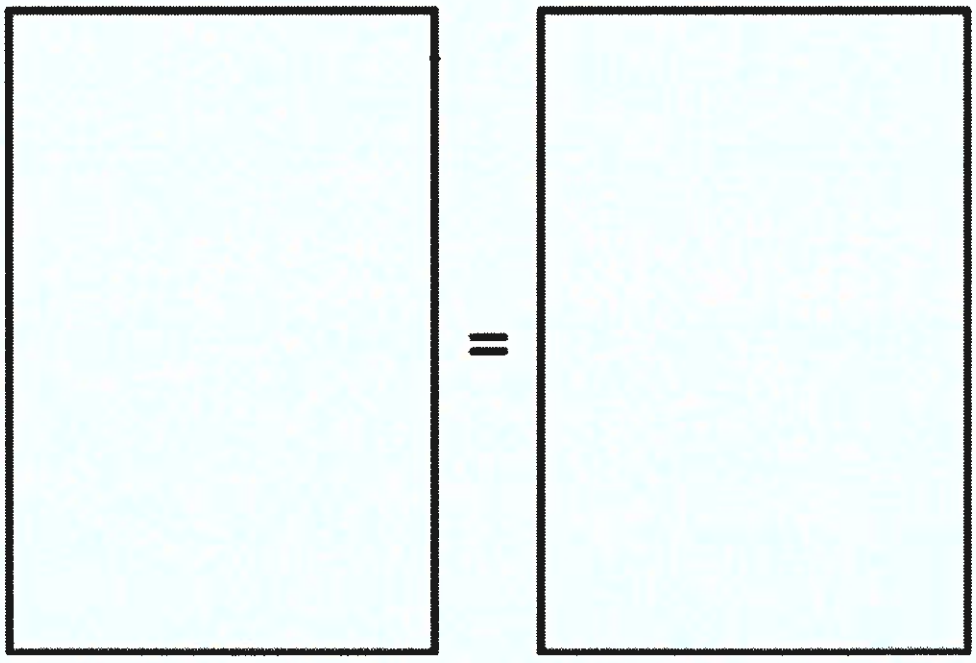
3. Using the given key and equation mat, represent and solve the following linear equation algebraically. Then, confirm your solution.

$$10=4-3x$$

Key:



Equation Mat



4. What is the solution to

$$-\frac{2}{3}x-4=-10$$

A. $x=21$
B. $x=19$
C. $x=11$
D. $x=9$

5. Aubrey's scarf is 4 inches more than half the length of Tyrone's scarf. Aubrey's scarf is 34 inches long. How long is Tyrone's scarf?

A. 15 inches
B. 60 inches
C. 112 inches
D. 128 inches

6. Which equation means "a number increased by the product of 7 and 12 is 93"?

A. $7x+12=93$
B. $7x+12x=93$
C. $(x+7)(12)=93$
D. $x+(7)(12)=93$

5. James solved the inequality $-3x \leq -9$ and got $x \leq 3$. What did he do wrong?

6. Identify all numerical values that are part of the solution set for the following inequality.

$$3x - 4 \leq -16$$

-4	4.5	-5.5
4	-3.5	-4.5

7. What values for w make the following inequality true? $-4w < 12$

A. $\{-3, -4, -5, -6, -7, ...\}$
B. $\{-4, -5, -6, -7, -8...\}$
C. $\{-3, -2, -1, 0, 1, ...\}$
D. $\{-2, -1, 0, 1, 2...\}$

8. What is the solution to $2y > -8$?

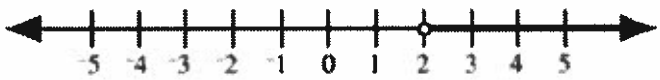
A. $y > -2$
B. $y > -4$
C. $y > -6$
D. $y > -10$

7.13

1. Solve the following two-step inequality.

$$\frac{x-9}{2} < -10$$

2. Look at the number line below.
The number line represents the graph of which inequality?



A. $3 > 2t - 1$
B. $5 < 3t + 11$
C. $6 < 2t + 2$
D. $8 > 2t - 4$

3. Select the statement that correctly represents the inequality below.

"Twice a number increased by $\bar{1}4$ is at least the opposite of 10"

A. $2n + 14 \leq -10$
B. $2n + 14 \geq -10$
C. $2n + 14 \leq 10$
D. $2n + 14 \geq 10$

4. A truck can carry a maximum of 1,350 pounds of weight. How many 250-pound scoops (d) of dirt can the truck carry?

A. $d > 5$
B. $d \geq 5$
C. $d < 5$
D. $d \leq 5$

7.1a

1. Look at this table.

Power of 10	Value
10^3	1,000
10^2	100
10^1	10
10^0	1
10^{-1}	$\frac{1}{10}$
10^{-2}	$\frac{1}{100}$

What would be the value of 10^{-3} ?

A $\frac{1}{101}$

B $\frac{1}{1,000}$

C $\frac{1}{1,001}$

D $\frac{1}{10,000}$

7.1a

2. What fraction and decimal have the same value as 10^{-2} ?

A $\frac{1}{10}$; 0.1

B $\frac{1}{100}$; 0.01

C $\frac{1}{200}$; 0.02

D $\frac{1}{1{,}000}$; 0.001

7.1b

3. What number belongs in the blank?

$1.36 \times 10^5 <$ _____ $< 7.87 \times 10^7$

A 1.95×10^4
B 8.9×10^4
C 1.22×10^6
D 8.1×10^7

7.1b

4. Which of the following numbers is the smallest?

A 9.05×10^6
B 1.25×10^7
C 9.5×10^5
D 8.91×10^7

7.1c

5. Which of the following does NOT contain equivalent fractions, decimals, and percents?

A $\frac{2}{5}$, 0.4, 40%

B $\frac{1}{4}$, 0.25, 25%

C $\frac{3}{8}$, 0.375, 37.5%

D $\frac{1}{20}$, 0.05, 50%

7.1c

6. John ate 3 out of 8 apples. Which of the following represents how many apples John ate?

A $\frac{3}{8}$; 0.38; 38%

B $\frac{8}{3}$; 0.83; 83%

C $\frac{3}{8}$; 0.375; 3.75%

D $\frac{3}{8}$; 0.375; 37.5%

7.1d

7. What is $\sqrt{256}$?

A 14
B 16
C 18
D 20

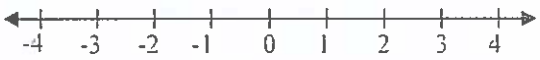
7.1d

8. Which is equivalent to $\sqrt{169}$?

A 338
B 83
C 19
D 13

7.1e

9. Here is a number line.



What is |−2| ?

A −4
B −2
C 0
D 2

7.1e

10. What numbers have an absolute value of 10?

A 10 and 0
B 10 and 100
C 10 and −10
D 100 and −100

7.2

11. A map of the Eastern United States has a scale of 1 inch for 50 miles. The cities of New Haven, CT and Washington, DC are 4.8 inches apart on the map. What is the actual distance between them?

A 48 miles
B 50 miles
C 240 miles
D 420 miles

7.2

12. The results of a random survey showed that 42 out of 80 people plan to vote for Mr. Vu for city council. Which is the best prediction of the total number of votes he will receive if 2,000 people vote?

A 25
B 50
C 120
D 1,000

7.2

13. Tami is 5.2 feet tall. Her shadow is 4 feet long. At the same time of day, an oak tree in her yard cast a 20-foot shadow. How tall is the tree?

A 16 feet
B 19 feet
C 21 feet
D 26 feet

7.3

14. The blueprint for Jessica's new room has a scale that states every $\frac{1}{4}$ inch is actually equal to 15 inches. If this blueprint shows the length of her new room to be $3\frac{1}{5}$ inches, what will be the actual length of her new room?

A 16 feet
B 48 feet
C 60 feet
D 192 feet

7.3

15. Suzanne is signing autographs at the opening night of her new play. She can sign 10 autographs in 15 minutes. Which of the following proportions could be used to find out how many minutes, *m*, it will take Suzanne to sign 40 autographs?

A $\frac{m}{10} = \frac{15}{40}$

B $\frac{15}{m} = \frac{40}{10}$

C $\frac{10}{15} = \frac{40}{m}$

D $\frac{40}{15} = \frac{10}{m}$

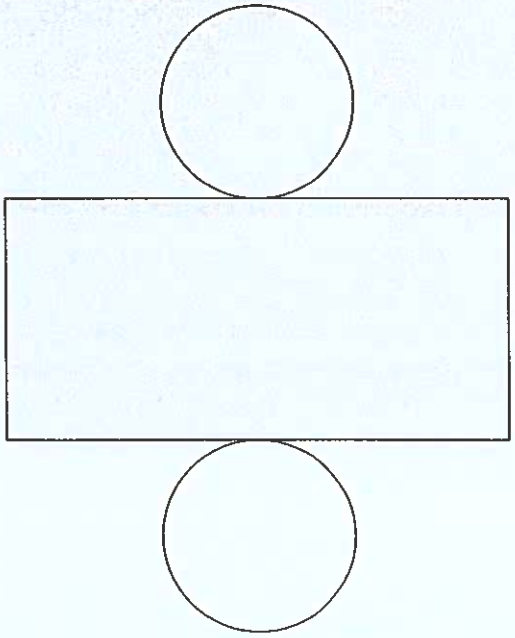
7.3

16. The length of Paul's desk is 38.5 inches. If one inch is about 2.5 centimeters, how long does Paul's desk measure in centimeters?

A 15.4 centimeters
B 15.6 centimeters
C 96.3 centimeters
D 96.5 centimeters

7.4a

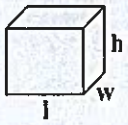
17. Here is the net of a solid.



Alex finds the area of both circles and the rectangular face and then adds these numbers together. What is Alex doing?

A Alex is finding the surface area of a cylinder.
B Alex is finding the surface area of a prism.
C Alex is finding the volume of a cylinder.
D Alex is finding the volume of a prism.

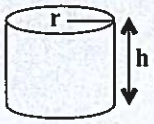
Use these formulas to answer the next 3 questions.



Prism

SA = 2lw + 2lh + 2wh

V = lwh



Cylinder

SA = $2\pi rh + 2\pi r^2$

V = $\pi r^2 h$

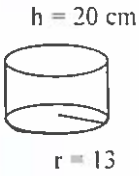
7.4b

18. What is the total surface area of a dog food can which has a diameter of 5 inches and a height of 7 inches?

A 149.15 sq. in.
B 187.5 sq. in.
C 266.9 sq. in.
D 298.3 sq. in.

7.4b

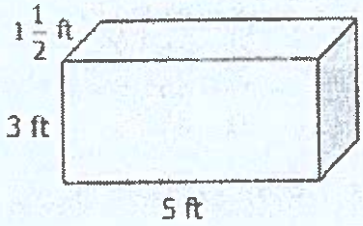
19. Find the volume.



A 260 cm^3
B 816.4 cm^3
C 1,632 cm^3
D 10,613.2 cm^3

7.4b

20. Carla is filling a fish aquarium with water. The aquarium has the shape of a rectangular prism that measures $1\frac{1}{2}$ feet wide, 3 feet high, and 5 feet long. What is the volume of the aquarium?



A $9\frac{1}{2}$ ft³

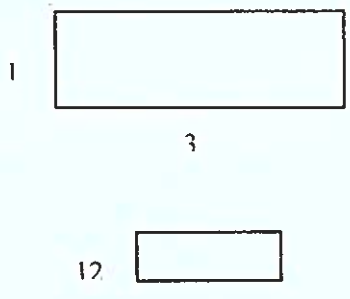
B $15\frac{1}{2}$ ft³

C $22\frac{1}{2}$ ft³

D $45\frac{1}{2}$ ft³

7.5

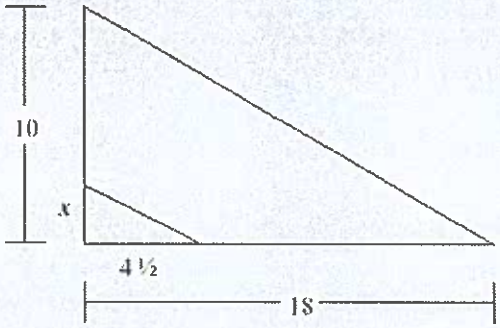
21. If the rectangle *MNQR* is similar to rectangle *STUV*, find the measure of *ST*.



A 2 in.
B 3 in.
C 2 ft.
D 3 ft.

7.5

22. What is the value of *x* in the diagram shown below?



A $2\frac{1}{2}$
B 5
C $7\frac{1}{2}$
D 9

7.5

23. If a square with a side of length, *L*, has an area, *A*, what is the area of another square with a side of length, *3L*?

A $6A$
B $9A$
C $12A$
D $15A$

7.6a

24. Which two quadrilaterals have all sides congruent?

A rhombus and square
B rectangle and square
C rhombus and trapezoid
D rhombus and parallelogram

7.6a

25. Choose the answer that correctly identifies *only the true statements* from the following list.

I. A parallelogram is a quadrilateral with opposite sides congruent and parallel.

II. A rectangle is a square and a polygon.

III. A rectangle is a parallelogram with four right angles.

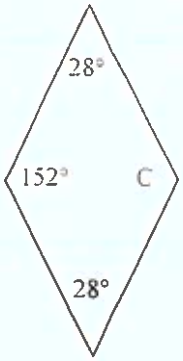
IV. A square is a rhombus.

V. A trapezoid has three parallel sides.

A I, II
B III, V
C I, II, III
D I, III, IV

7.6b

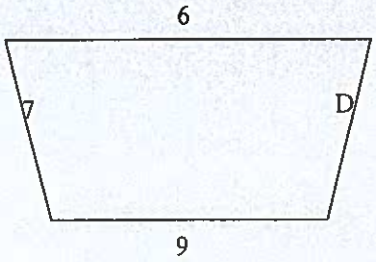
26. What is the measure of angle C in this figure?



A 28°
B 124°
C 152°
D 180°

7.6b

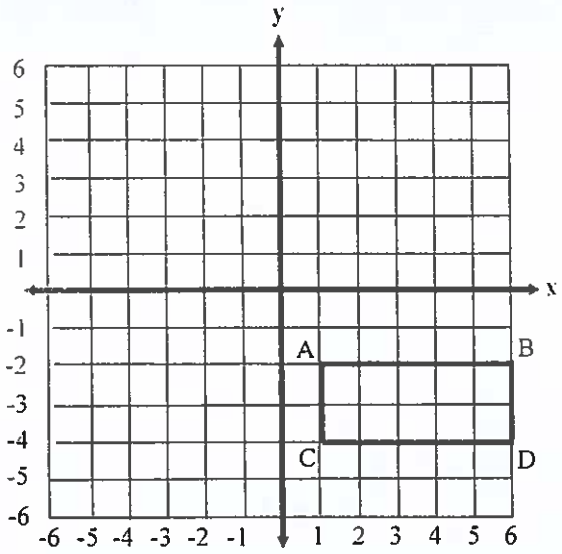
27. What is the length of side D in the isosceles trapezoid below?



A 6
B 7
C 9
D 22

7.7

28. Rectangle ABCD is plotted on the coordinate plane below.

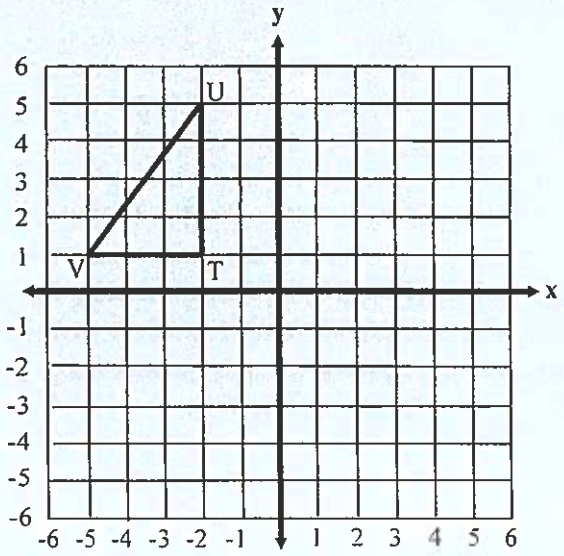


If rectangle ABCD is translated left 7 units and down 1 unit, what will be the coordinates of Point C'?

A (6, –5)
B (–6, 5)
C (–6, –5)
D (–5, –6)

7.7

29. Triangle TUV is plotted on the coordinate plane below.

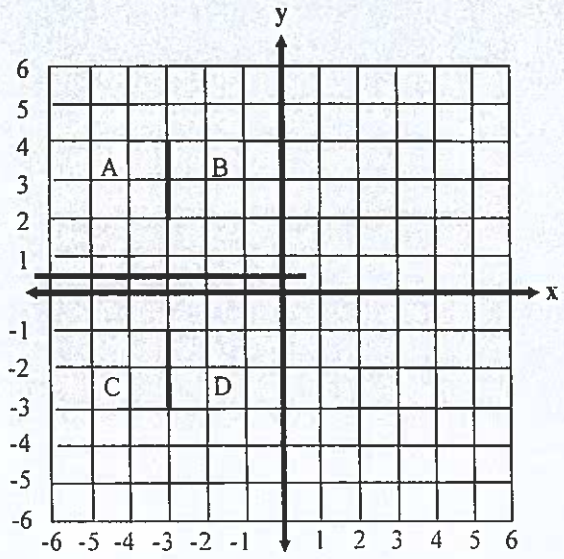


If triangle TUV is reflected across the *y*-axis, what will be the coordinates of Point U'?

A (−2, 5)
B (2, 5)
C (−5, −2)
D (−2, −5)

7.7

30. Rectangle ABCD is plotted on the coordinate plane below.



If rectangle ABCD is reflected across the *x*-axis, what will be the coordinates of Point C′?

A (4, −3)
B (4, 2)
C (−4, 2)
D (−4, 3)

7.8a

31. Megan tossed a coin 30 times. The table below shows the results of Megan's experiment.

Heads	18
Tails	12

What is the theoretical probability for tossing heads?

A $\frac{2}{5}$

B $\frac{1}{3}$

C $\frac{1}{2}$

D $\frac{3}{5}$

7.8a

32. A bag has 4 red tiles, 4 blue tiles, 4 green tiles, and 4 yellow tiles. Zach randomly selects one tile from the bag twenty times. Each time a tile is selected it is returned to the bag. The table shows the results of his experiment.

Color of Tile	Number of Times Selected
Red	6
Yellow	4
Blue	5
Green	5

What is the experimental probability of selecting a red or a green tile?

A $\frac{1}{2}$

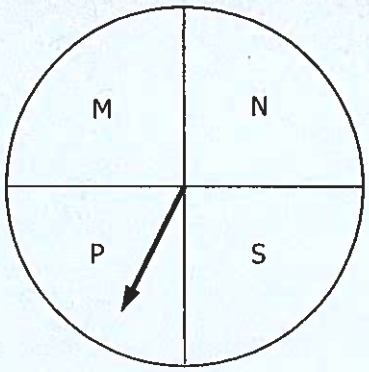
B $\frac{1}{4}$

C $\frac{11}{20}$

D $\frac{3}{5}$

7.8b

33. Lisa spins this spinner 20 times.



This table shows the results of the spins.

Spinner Section	Number of Spins
M	6
N	5
P	4
S	5

What is the difference between the theoretical probability and the experimental probability for landing on the letter P?

A $\frac{1}{10}$

B $\frac{1}{20}$

C $\frac{1}{5}$

D 0

7.8b

34. There are three candidates for a local election. A polling service took a voter survey by sampling 1,000 voters on the day before the election. The results are shown in the table below.

Votes for Candidates in a Sample

Candidate	Votes
Griffin	400
Thomas	300
Johnson	175
Undecided	105

Which statement describes the relationship between the outcome from the sample and the outcome from the voting?

A The sample poll results will be exactly the same as the actual election results.
B Griffin will definitely win the election.
C It is possible that Thomas may win the election.
D If 10,000 people vote during this election, Griffin will get exactly 4,000 votes.

7.9a

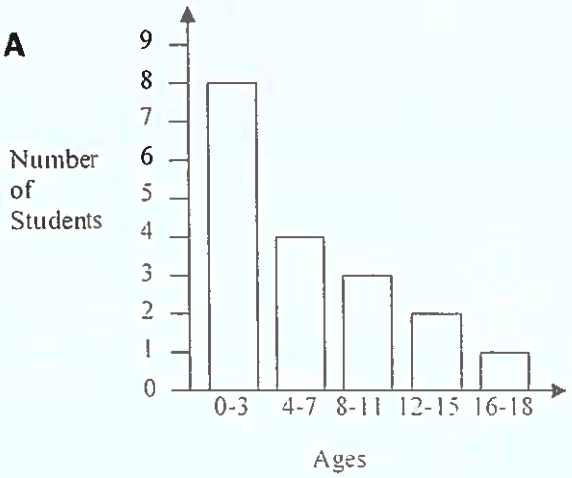
35. Amanda collected the data about the number of absences by students in her second period math class for the entire school year.

Second Period Math Class

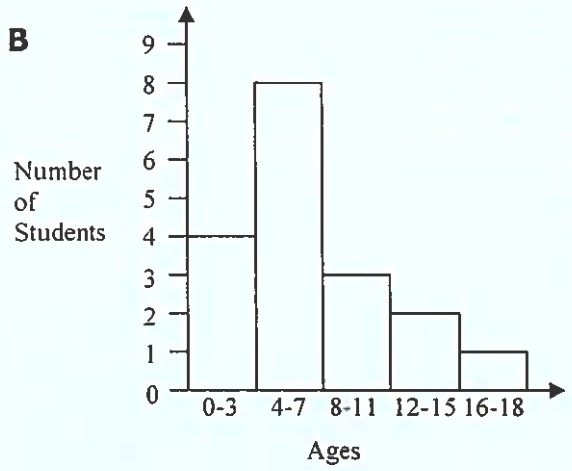
Number of Absences	Number of Students
0-3	8
4-7	4
8-11	3
12-15	2
16-18	1

Which histogram best displays this data?

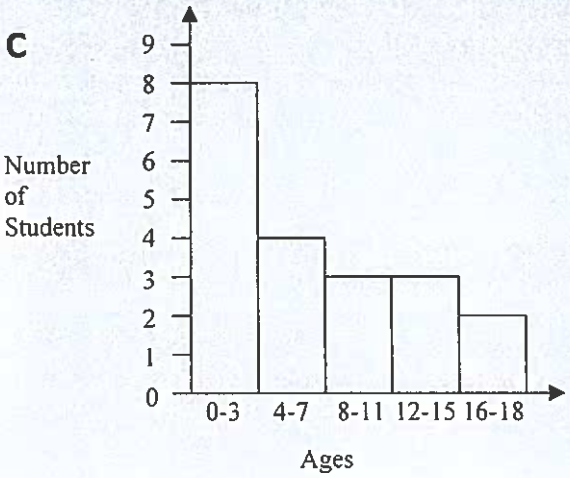
A



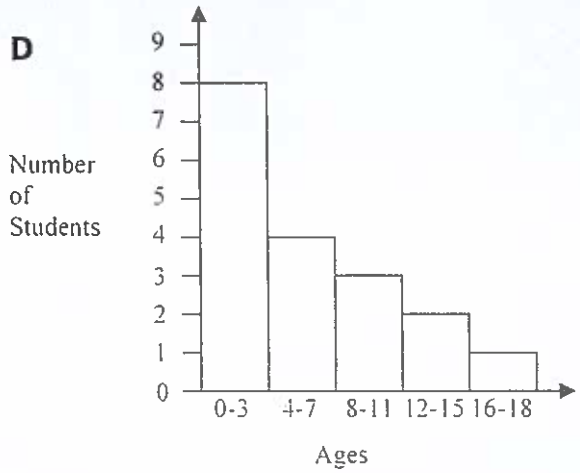
B



C

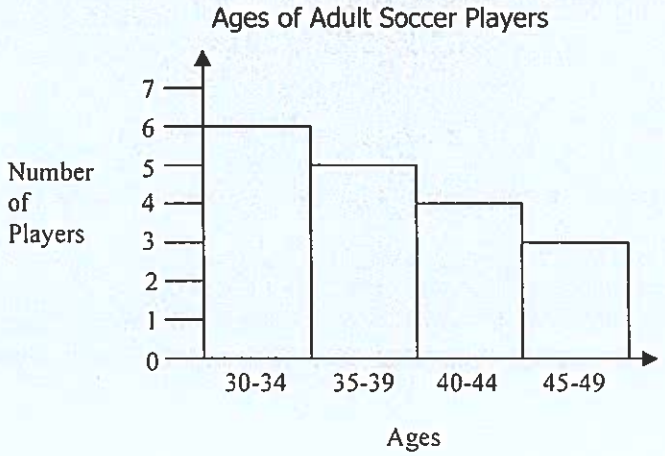

Number of Students
9
8
7
6
5
4
3
2
1
0
0-3
4-7
8-11
12-15
16-18
Ages

D


Number of Students
9
8
7
6
5
4
3
2
1
0
0-3
4-7
8-11
12-15
16-18
Ages

7.9b

36. What statement best describes the data shown in this histogram?



A As the age of the players increase, the number of players in that age range increases.

B As the age of the players decrease, the number of players in that age group decreases.

C As the age of the players increases, the number of players in that age group remains the same.

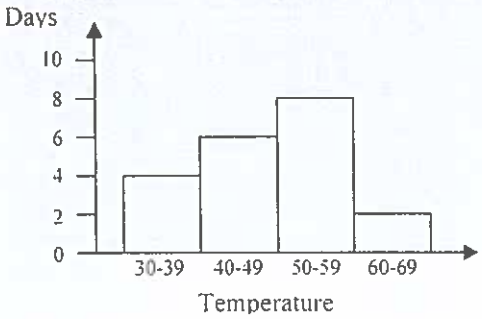
D As the age of the players increases, the number of players in that age group decreases.

7.9c

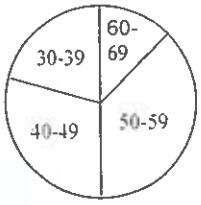
37. Juan kept track of the high temperatures for the first 20 days of January. The table shows his findings. Which data display does NOT show how many days had high temperatures below 50 degrees?

Date	High Temp.	Date	High Temp.	Date	High Temp.	Date	High Temp.
1st	65°	6th	54°	11th	39°	16th	52°
2nd	56°	7th	46°	12th	50°	17th	56°
3rd	60°	8th	40°	13th	33°	18th	42°
4th	55°	9th	35°	14th	45°	19th	38°
5th	57°	10th	42°	15th	50°	20th	41°

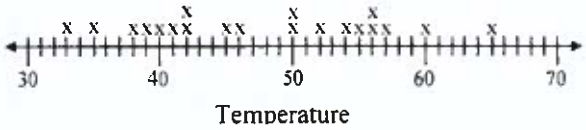
A



B



C



D

High Temperatures

3	3 5 8 9
4	0 1 2 2 5 6
5	0 0 2 4 5 6 6 7
6	0 5

3 | 0 = 30°

7.10a

38. What is the rate of change, *m*, in this relationship?

Number of Carnations (C)	Price (P)
3	$4.50
4	$6.00
5	$7.50
6	$9.00
7	$10.50

A $m = 1.5$
B $m = 3$
C $m = 4.5$
D $m = 7$

7.10a

39. What equation could represent the relationship between *x* and *y*?

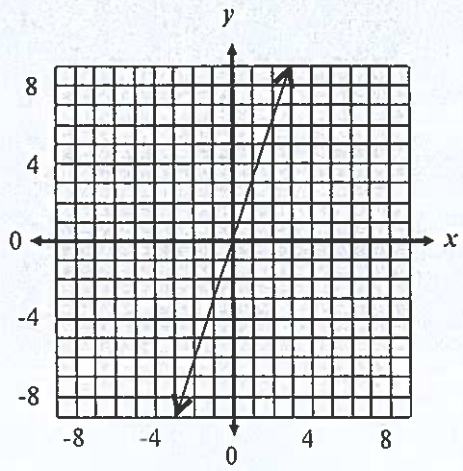
x	*y*
2	6
3	9
5	15
8	24
11	33

A $y = x$
B $y = 2x$
C $y = 3x$
D $y = 5x$

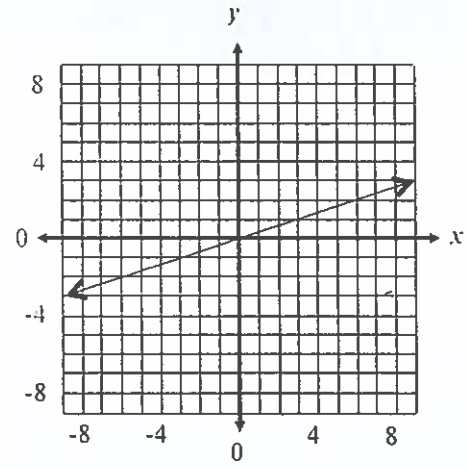
7.10b

40. Which of the following graphs shows the line $y = -3x$?

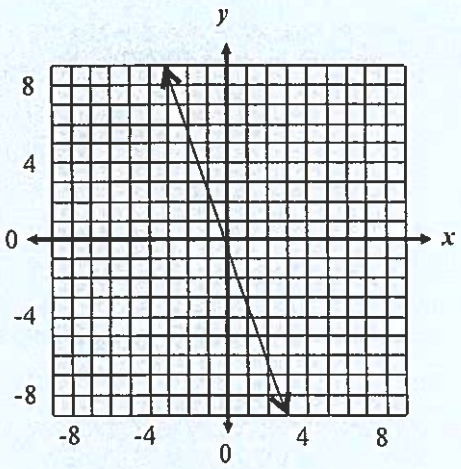
A



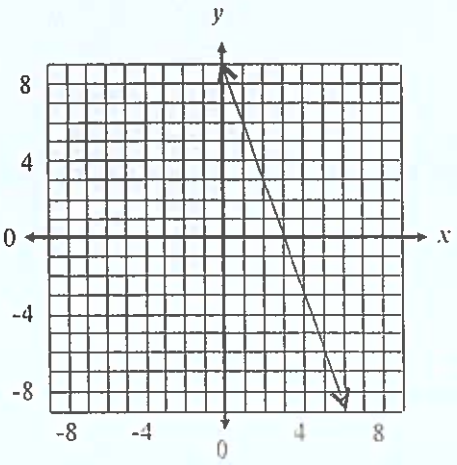
B



C



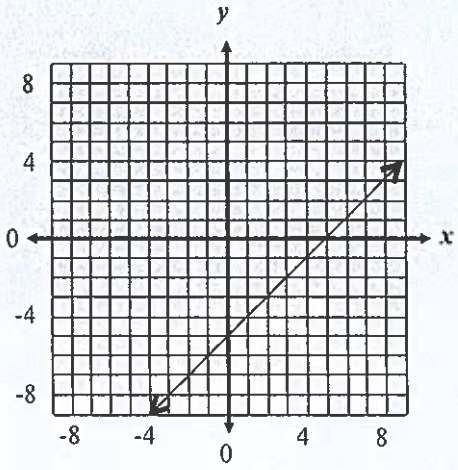
D



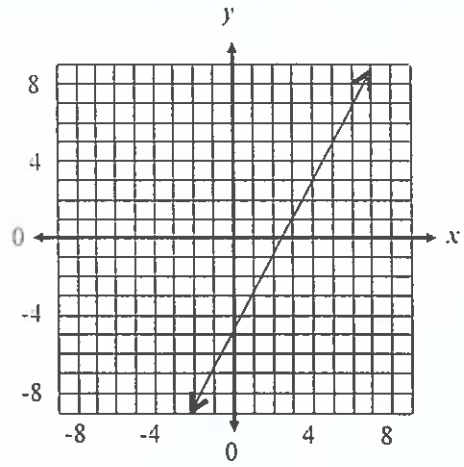
7.10b

41. Which of the following graphs shows a line with a slope of 1 passing through (5, 5)?

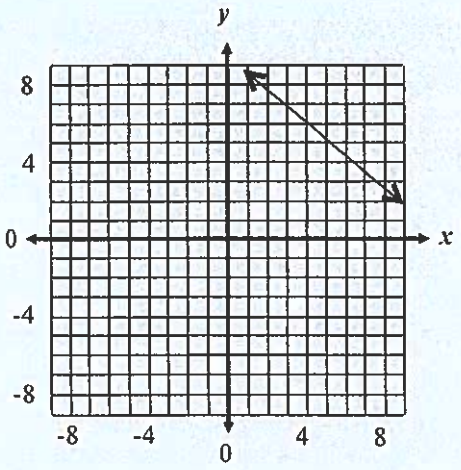
A



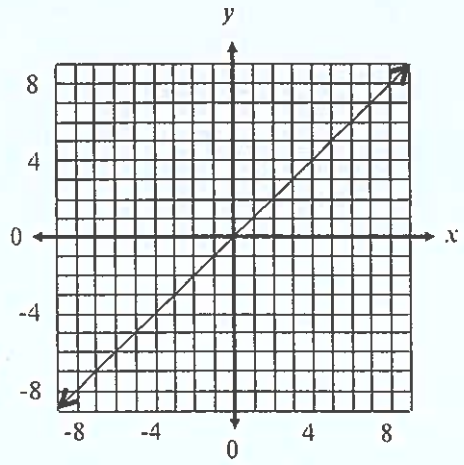
B



C



D



7.10c

42. What is the *y*-intercept, *b*, in this relationship?

x	*y*
1	8
2	15
6	43
7	50
9	64

A $b = 1$
B $b = -1$
C $b = 3$
D $b = 7$

7.10c

43. Which equation could be used to describe the data in the table below?

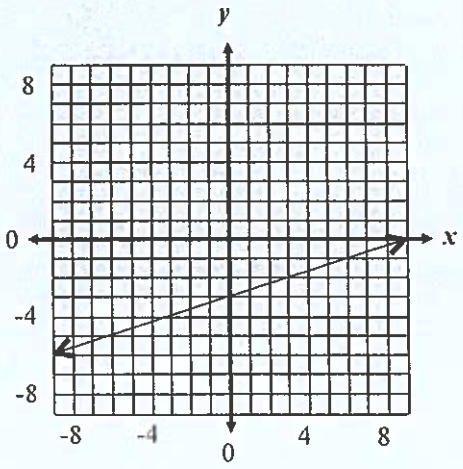
x	3	4	7	8	12
y	12	15	24	27	39

A $x + 9$
B $2x + 6$
C $3x + 3$
D $4x - 2$

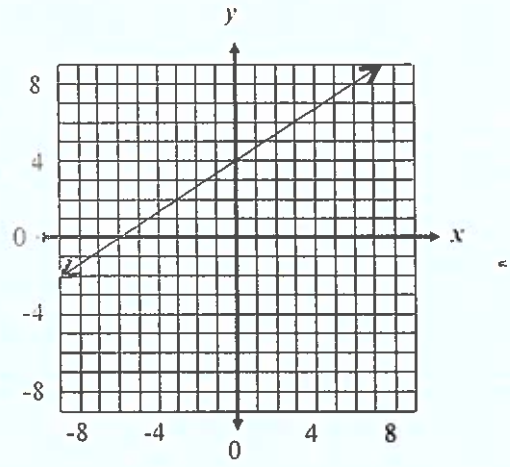
7.10d

44. Which of the following graphs shows a line with a *y*-intercept of 4 passing through (3, -2)?

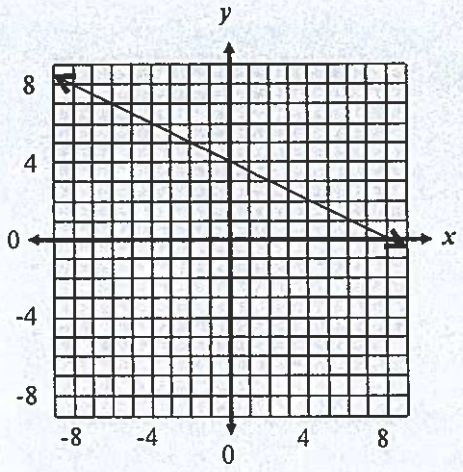
A



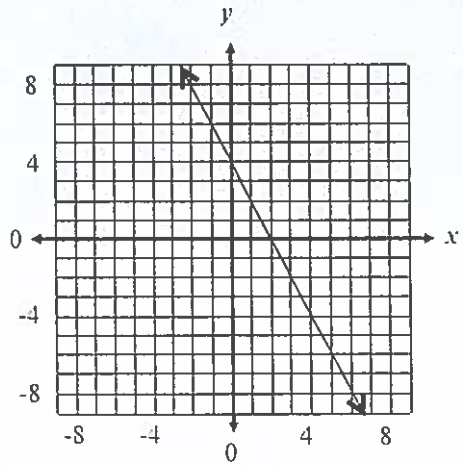
B



C



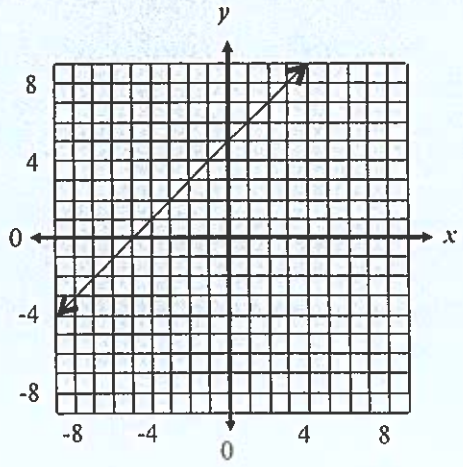
D



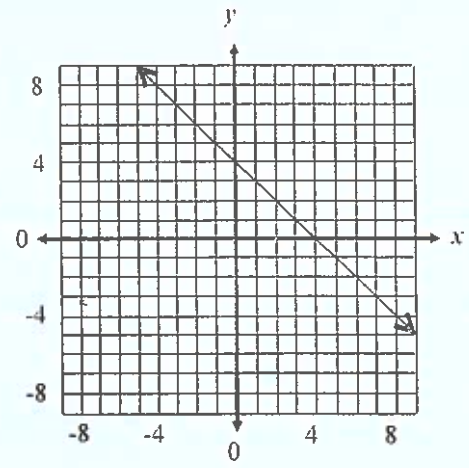
7.10d

45. Which of the following graphs shows the line $y = x - 5$?

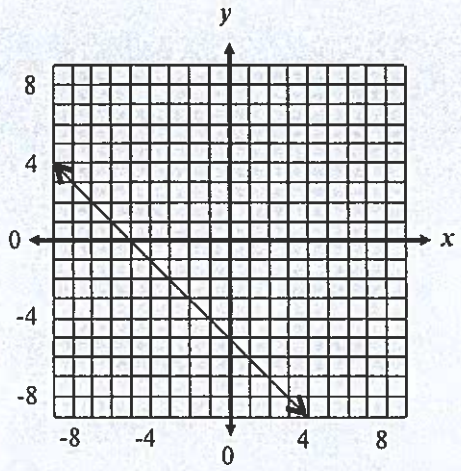
A



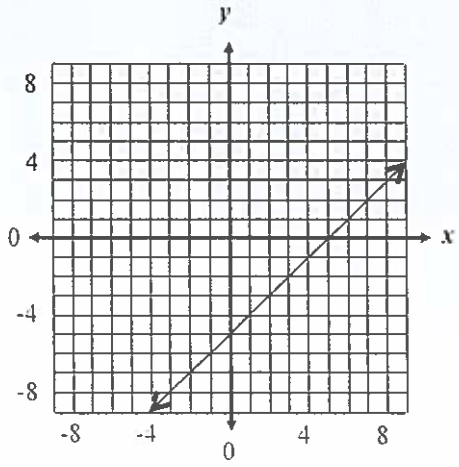
B



C



D



7.10e

46. Which table could NOT be used to graph $y = 4x + 2$?

A

x	y
−3	−14
0	0
3	14

B

x	y
−1	−2
0	2
1	6

C

x	y
1	6
2	10
3	14

D

x	y
2	10
0	2
4	18

7.11

47. **The volume of a five-sided box is given by the formula $2x + 3x^2 - xy + y^2$, where x is the length of each side and y is the height of the box.**

What is the volume when $x = 4$ and $y = 2$?

A 44
B 48
C 52
D 58

7.11

48. **What is the value of $4 - y(2y - 1)$, when $y = -2$?**

A −6
B −2
C 14
D 20

7.11

49. Evaluate $\frac{a^2 + b^2}{2} + 8.5$, if $a = 3$, $b = 4$.

A 15.5
B 21
C 25.5
D 33

7.12

50. **Two cats and a dog together weigh 65 pounds. The dog weighs 47 pounds. Both cats weigh the same amount. How much does each cat weigh?**

A 6 pounds
B 9 pounds
C 18 pounds
D 36 pounds

7.12

51. **What value of x makes the equation $\frac{x}{4} + 5 = 11$ true?**

A 64
B 32
C 24
D −64

7.12

52. **Solve the equation: $4n - 3 = 21$**

A $n = -3$
B $n = 6$
C $n = 3$
D $n = -5$

7.13

53. What is the solution to $-\frac{1}{2}x < -120$?

A $x > -60$
B $x < 60$
C $x < 240$
D $x > -240$

7.13

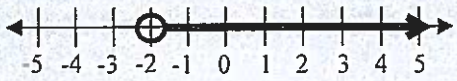
54. **Mrs. Corbett rented a truck to move some furniture. The rental charge is $60 plus $0.25 per mile. She wants to spend no more than $180, not including tax. What is the maximum number of miles that she can drive the truck?**

A 85 miles
B 360 miles
C 480 miles
D 720 miles

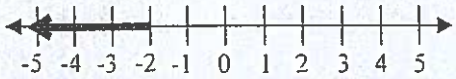
7.13

55. Which is the solution to $-9x > 18$?

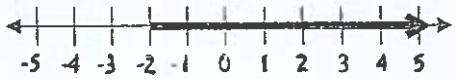
A



B



C



D