

**Solving One-Variable Equations and Inequalities***Lesson Quiz*

- 1 The equation $2x = 8$ is modeled below.

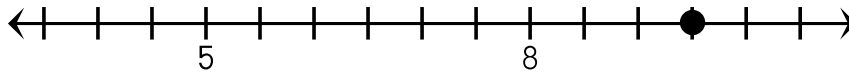
$$\begin{array}{|c|} \hline x \\ \hline \end{array} \begin{array}{|c|} \hline x \\ \hline \end{array} = \begin{array}{|c|} \hline 1 \\ \hline \end{array} \begin{array}{|c|} \hline 1 \\ \hline \end{array} \begin{array}{|c|} \hline 1 \\ \hline \end{array} \begin{array}{|c|} \hline 1 \\ \hline \end{array} \begin{array}{|c|} \hline 1 \\ \hline \end{array} \begin{array}{|c|} \hline 1 \\ \hline \end{array} \begin{array}{|c|} \hline 1 \\ \hline \end{array} \begin{array}{|c|} \hline 1 \\ \hline \end{array} \begin{array}{|c|} \hline 1 \\ \hline \end{array}$$

What value of x makes the equation true?

- A** $x = 1$
- B** $x = 2$
- C** $x = 4$
- D** $x = 8$
-
- 2 Which situation is best represented by the equation $x - 18 = 30$?
- A** Arnold made 18 of the last 30 free throws attempted. What is x , the total number of free throws attempted?
- B** Charles spent 30 minutes on math homework and 18 minutes on science homework. What is x , the total amount of time Charles spent on homework?
- C** Rosetta shared 30 brownies with the 18 people in her homeroom. What is x , the number of brownies that each person received?
- D** Shania spent \$18 of her allowance on shoes and had \$30 left. What is x , the amount of Shania's allowance?



3 The solution to an equation is shown on the number line below.



Which of the following equations does NOT have the solution represented on the number line?

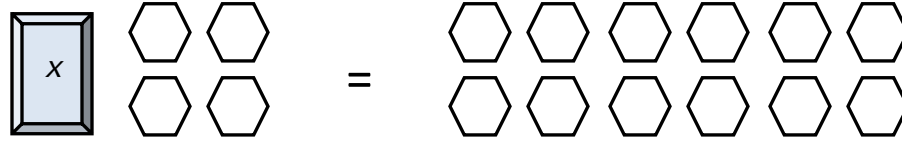
- A $x + 8 = 17.5$
 - B $4x = 38$
 - C $x \div 2 = 4.75$
 - D Not here
-

4 What is the solution to the inequality $4x < 73$?

- A $x > 18\frac{1}{4}$
- B $x < 18\frac{1}{4}$
- C $x < 18.1$
- D $x > 18.1$



5 The model below represents the equation $x + 4 = 12$.



What is the first step in finding the value of x ?

- A Add 4 hexagons to each side of the model.
- B Add 12 hexagons to each side of the model.
- C Subtract 4 hexagons from each side of the model.
- D Subtract 12 hexagons from each side of the model.

6 An angle has a measure of 63.5° . Ariette, Bertrand, and Carly each wrote an equation describing the relationship between the measure of this angle and its complement or supplement.

Angle Equations

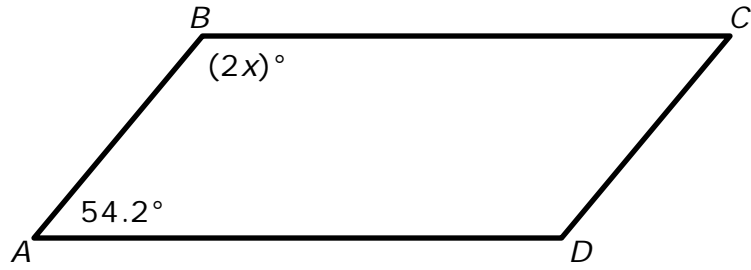
Ariette	Bertrand	Carly
Complementary angles have measures with a sum of 90° .	Supplementary angles have measures with a sum of 180° .	Supplementary angles have measures with a sum of 90° .
$x + 63.5^\circ = 90^\circ$	$x - 180^\circ = 63.5^\circ$	$90^\circ + x = 63.5^\circ$

Which student wrote a correct equation?

- A Ariette
- B Bertrand
- C Carly
- D Not here



7 In the parallelogram below, $m\angle A = 54.2^\circ$.



What is the value of x ?

Record your answer and fill in the bubbles on your answer document. Be sure to use the correct place value.

					.		
\oplus	0	0	0	0		0	0
\ominus	1	1	1	1		1	1
	2	2	2	2		2	2
	3	3	3	3		3	3
	4	4	4	4		4	4
	5	5	5	5		5	5
	6	6	6	6		6	6
	7	7	7	7		7	7
	8	8	8	8		8	8
	9	9	9	9		9	9



8 Which of the following values will make the inequality $8.5x \geq 14$ true?

- I. $x = 0.9$
- II. $x = 1.5$
- III. $x = 2.3$

- A I only
 - B II only
 - C I and II only
 - D II and III only
-

9 Two rectangles have the same area of 48 square centimeters. The length of one rectangle is 16 centimeters and the length of the second rectangle is 12 centimeters. What is the difference between the widths of the two rectangles?

- A 1 centimeter
 - B 3 centimeters
 - C 4 centimeters
 - D 7 centimeters
-

10 Which of the following equations has the same solution as $x - 16 = 37$?

- A $x + 53 = 0$
- B $4.1x = 217.3$
- C $3.5x = 73.5$
- D $53 \div x = 1,113$



- 11** Which situation **cannot** be represented by the equation $x + 20 = 50$?
- A** Marcy was given \$50 for a birthday present. She spent \$20 to buy a new pair of shorts. What is x , the amount of money March has left?
 - B** At the end of the first quarter, the combined score of two basketball teams was 50 points. The home team scored 20 points. What is x , the number of points scored by other team?
 - C** In training for a marathon, Riley ran a total of 50 miles last week. He ran 20 miles on the weekend. What is x , the number of miles he ran during the week?
 - D** There are 50 sports magazines on the shelf at a bookstore. There are also 20 entertainment magazines on the shelf. What is x , the total number of sports magazines and entertainment magazines on the shelf?
-

- 12** Thomas bought a year membership at a health club. He paid \$150. Thomas wanted to determine the cost, c , of his membership each month. He created the model shown to help him find the price.

150											
c	c	c	c	c	c	c	c	c	c	c	c

What was the price of the membership each month?

- A** \$12.50
- B** \$162
- C** \$1,800
- D** \$10.25



- 13** Dominga needs to write an essay with at least 600 words. She has already written 287 words. The inequality shown can be used to find w , the number of words Dominga still needs to write.

$$w + 287 \geq 600$$

Which inequality represents the solution set for this situation?

A $w \leq 313$

B $w \geq 313$

C $w \geq 887$

D $w \leq 887$

