

**Pre-Algebra, Unit 02B Practice Test: Multi-Step Equations**

Name:

Date:

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1. Describe the general strategy to solving an equation.

2. Which of the following would be the best choice for the first step in solving for  $x$  in the equation below?

$$2x + 8 = -10$$

- A. add 8 to both sides of the equation
- B. subtract 8 from both sides of the equation
- C. multiply both sides of the equation by 2
- D. divide both sides of the equation by  $-2$

3. What is the value of  $x$  that satisfies the equation  $-3x - 6 = 30$ ?

- A.  $-12$
- B.  $-8$
- C.  $8$
- D.  $12$

4. What is the solution to the equation below?

$$-3(2x - 7) + 4x = 15$$

- A.  $3$
- B.  $-4$
- C.  $-11$
- D.  $-18$

5. What value of  $x$  makes the equation below true?

$$5x + 4 = 9x - 12$$

- A.  $-4$
- B.  $-2$
- C.  $2$
- D.  $4$

6. (SBAC) Three students solved the equation  $3(2x + 3) = 21$  in different ways, but each student arrived at the correct answer. Circle **all** of the solutions that show a correct method for solving the equation.

A.  $3(2x + 3) = 21$   
 $6x + 9 = 21$   
 $\frac{6x}{6} + \frac{9}{6} = \frac{21}{6}$   
 $-\frac{9}{6} = -\frac{9}{6}$   
 $x = \frac{12}{6}$   
 $x = 2$

B.  $\frac{1}{3} \cdot 3(2x + 3) = 21 \cdot \frac{1}{3}$   
 $2x + 3 = 7$   
 $-3 = -3$   
 $\frac{2x}{2} = \frac{4}{2}$   
 $x = 2$

C.  $3(2x + 3) = 21$   
 $5x + 9 = 21$   
 $+9 = +9$   
 $15x = 30$   
 $\frac{15x}{15} = \frac{30}{15}$   
 $x = 2$

7. (SE) Solve  $\frac{5c}{6} + \frac{7}{12} = \frac{11c}{18} - \frac{1}{6}$ . Show your work.

8. (SE) Solve for  $x$ . Show all your work.  
 $3.5(x + 2) - 6.5 = 2.5(x - 4)$

9. (SBAC/SE) For each linear equation in this table, indicate whether the equation has no solution, one solution, or infinitely many solutions by placing a ✓ in the appropriate column. Show your work below the chart.

Equation	No Solution	One Solution	Infinitely Many Solutions
$4x - 1 = -4x + 1$			
$3x + 11 = 3x - 11$			
$4(3x + 2) = 12x + 8$			
$2x + 5 = 5$			

Work:

$$4x - 1 = -4x + 1$$

$$3x + 11 = 3x - 11$$

$$4(3x + 2) = 12x + 8$$

$$2x + 5 = 5$$

10. (SBAC/SE) Choose the best values for P and Q so that the equation will have **no** solutions.

$$2 + 6(2x - 1) = 4(Px + Q)$$

- A.  $P = 3$  and  $Q = -1$
- B.  $P = 3$  and  $Q = 1$
- C.  $P = 2$  and  $Q = -1$
- D.  $P = 2$  and  $Q = 1$

