

Name _____

Mrs. Roumbos

Date _____

8A Period ____

Extra Review for Algebra Test

1) Which of the following is the solution to the equation $4(x - 1) = 3(2x - 6) + 4$?

(1) 9

(2) -4

(3) 5

(4) -17

2) Which of the following solves the equation $8 - (2x - 6) = 22$?

(1) -10

(2) -4

(3) 0

(4) 7

3) Which expression is equivalent to $5(3x + 7) - (4x - 6)$

(1) $11x + 41$

(2) $11x + 29$

(3) $19x - 29$

(4) $19x + 29$

For #'s 4-13 Solve and say what properties you used to solve

4) $3(2x + 1) - 7 = 50$

5) $5(x + 1) = 2(4x + 7)$

$$6) 5x - 3 = 13 - 3x$$

$$7) \frac{5}{9}p = -10$$

$$8) 2y + 5 = 19$$

$$9) 3a - 16 + 7 = 5a + 10 - 3a - 18$$

$$10) 2 - \frac{3}{4}y = \frac{1}{8}y + 9$$

$$11) 3x - 5(2x - 6) = 9(2 - x)$$

$$12) 4(2x + 1) - 3(2x - 5) = 29$$

$$13) 14 + 5n = -4n + 17$$

Extra Review for Algebra Test

1) Which of the following is the solution to the equation $4(x - 1) = 3(2x - 6) + 4$?

- (1) 9 (2) -4 (3) 5 (4) -17

$$\begin{aligned} 4(x-1) &= 3(2x-6) + 4 \\ 4x - 4 &= 6x - 18 + 4 \\ 4x - 4 &= 6x - 14 \\ \underline{-4x} \quad \underline{-4x} & \\ -4 &= 2x - 14 \\ +14 \quad +14 & \\ \hline 10 &= 2x \\ \frac{10}{2} &= \frac{2x}{2} \\ \boxed{x=5} & \end{aligned}$$

2) Which of the following solves the equation $8 - (2x - 6) = 22$?

- (1) -10 (2) -4 (3) 0 (4) 7

$$\begin{aligned} 8 - (2x - 6) &= 22 \\ 8 - 2x + 6 &= 22 \\ 14 - 2x &= 22 \\ \underline{-14} \quad \underline{-14} & \\ -2x &= 8 \\ \underline{-2} \quad \underline{-2} & \\ \boxed{x=-4} & \end{aligned}$$

3) Which expression is equivalent to $5(3x + 7) - (4x - 6)$?

- (1) $11x + 41$ (2) $11x + 29$ (3) $19x - 29$ (4) $19x + 29$

$$\begin{aligned} 5(3x+7) - (4x-6) \\ 15x + 35 - 4x + 6 \\ \boxed{11x + 41} \end{aligned}$$

For #'s 4-13 Solve and say what properties you used to solve

4) $3(2x + 1) - 7 = 50$

$$\begin{aligned} 6x + 3 - 7 &= 50 && \text{Distributive Prop} \\ 6x - 4 &= 50 && \text{Combine like terms} \\ \underline{+4} \quad \underline{+4} & && \text{Add Prop of Equality} \\ 6x &= 54 && \text{Div. Prop of Equality} \\ \frac{6x}{6} &= \frac{54}{6} && \\ \boxed{x=9} & && \end{aligned}$$

5) $5(x + 1) = 2(4x + 7)$

$$\begin{aligned} 5x + 5 &= 8x + 14 && \text{Distributive Prop} \\ \underline{-5x} \quad \underline{-5x} & && \text{Sub. Prop. of Equality} \\ 5 &= 3x + 14 && \\ \underline{-14} \quad \underline{-14} & && \text{Sub. Prop. of Equality} \\ -9 &= 3x && \\ \underline{-3} \quad \underline{-3} & && \text{Div. Prop. of Equality} \\ \boxed{x=-3} & && \end{aligned}$$

$$6) 5x - 3 = 13 - 3x$$

$$\begin{array}{r} +3x \quad +3x \\ \hline 8x - 3 = 13 \end{array}$$

Add. Prop. of Equality

$$\begin{array}{r} 8x - 3 = 13 \\ +3 \quad +3 \\ \hline 8x = 16 \end{array}$$

Add. Prop. of Equality

$$\begin{array}{r} 8x = 16 \\ \frac{8x}{8} = \frac{16}{8} \\ \hline x = 2 \end{array}$$

Div. Prop. of Equality

$$7) \frac{5}{9}p = -10$$

$$\left(\frac{9}{5}\right)\left(\frac{5}{9}p\right) = (-10)\left(\frac{9}{5}\right)$$

Multiplication Prop. of Equality

$$\boxed{p = -18}$$

$$8) 2y + 5 = 19$$

$$\begin{array}{r} -5 \\ \hline 2y = 14 \end{array}$$

Sub. Prop. of Equality

$$\begin{array}{r} 2y = 14 \\ \frac{2y}{2} = \frac{14}{2} \\ \hline y = 7 \end{array}$$

Div. Prop. of Equality

$$\boxed{y = 7}$$

$$*9) 3a - 16 + 7 = 5a + 10 - 3a - 18$$

$$\begin{array}{r} 3a - 16 + 7 = 5a - 3a + 10 - 18 \\ 3a - 9 = 2a - 8 \\ -2a \quad -2a \\ \hline a - 9 = -8 \end{array}$$

Commutative Prop
Combine like terms
Sub. Prop. of Equality

$$\begin{array}{r} a - 9 = -8 \\ +9 \quad +9 \\ \hline a = 1 \end{array}$$

Add. Prop. of Equality

$$\boxed{a = 1}$$

$$10) 2 - \frac{3}{4}y = \frac{1}{8}y + 9$$

$$\begin{array}{r} +\frac{3}{4}y \quad +\frac{3}{4}y \\ \hline 2 = \frac{7}{8}y + 9 \end{array}$$

Add. Prop. of Equality

$$\begin{array}{r} 2 = \frac{7}{8}y + 9 \\ -9 \quad -9 \\ \hline -7 = \frac{7}{8}y \end{array}$$

Sub. Prop. of Equality

$$\left(\frac{8}{7}\right)(-7) = \left(\frac{7}{8}y\right)\left(\frac{8}{7}\right)$$

Mult. Prop. of Equality

$$\boxed{y = -8}$$

$$11) 3x - 5(2x - 6) = 9(2 - x)$$

$$\begin{array}{r} 3x - 10x + 30 = 18 - 9x \\ -7x + 30 = 18 - 9x \\ +9x \quad +9x \\ \hline 2x + 30 = 18 \end{array}$$

Distributive Property
Combine like terms
Add. Prop. of Equality

$$\begin{array}{r} 2x + 30 = 18 \\ -30 \quad -30 \\ \hline 2x = -12 \end{array}$$

Sub. Prop. of Equality

$$\begin{array}{r} 2x = -12 \\ \frac{2x}{2} = \frac{-12}{2} \\ \hline x = -6 \end{array}$$

Div. Prop. of Equality

$$12) 4(2x + 1) - 3(2x - 5) = 29$$

$$8x + 4 - 6x + 15 = 29$$

Distributive Prop.

$$8x - 6x + 4 + 15 = 29$$

Comm. Prop

$$2x + 19 = 29$$

Combine like terms

$$\begin{array}{r} 2x + 19 = 29 \\ -19 \quad -19 \\ \hline 2x = 10 \end{array}$$

Sub. Prop. of Equal

$$\begin{array}{r} 2x = 10 \\ \frac{2x}{2} = \frac{10}{2} \\ \hline x = 5 \end{array}$$

Div. Prop. of Equal

$$\boxed{x = 5}$$

$$13) 14 + 5n = -4n + 17$$

$$\begin{array}{r} +4n \quad +4n \\ \hline 14 + 9n = 17 \end{array}$$

Addition Property of Equality

$$\begin{array}{r} 14 + 9n = 17 \\ -14 \quad -14 \\ \hline 9n = 3 \end{array}$$

Sub. Prop. of Equality

$$\begin{array}{r} 9n = 3 \\ \frac{9n}{9} = \frac{3}{9} \\ \hline n = \frac{1}{3} \end{array}$$

Div. Prop. of Equality

$$\boxed{n = \frac{1}{3}}$$