

Name: \_\_\_\_\_

KEY

Math 082 Test #1

1) Simplify:  $4x - 6 + 7x + 14 =$   $11x + 8$

*(Handwritten: +8 above, 11x below, with arrows connecting terms)*

2) Simplify:  $4(-3x + 2) - 12 = -12x + 8 - 12 = -12x - 4$

*(Handwritten: red arrow from 4 to -3x)*

Solve each equation for x:

3)  $\frac{-2x}{-2} = \frac{18}{-2}$

$x = -9$

4)  $4x - 9 = -29$

$\frac{4x}{4} = \frac{-20}{4}$

$x = -5$

5)  $-2x + 7 - 5x + 4 = 32$

$-7x + 11 = 32$

$\frac{-7x}{-7} = \frac{21}{-7}$

$x = -3$

6)  $6x - 4 = 8x + 14$

$-6x - 6x$

$-4 = 2x + 14$

$-14 - 14$

$\frac{-18}{2} = \frac{2x}{2}$

$x = -9$

7)  $-4(2x - 5) = 2x - 40$

$-8x + 20 = 2x - 40$

$+8x + 8x$

$20 = 10x - 40$

$+40 + 40$

$\frac{60}{10} = \frac{10x}{10}$

$x = 6$

8) Solve for a:  $6a + 12b = 7c$

$$\frac{-12b \quad -12b}{\phantom{6a} \phantom{7c}}$$

$$\frac{6a}{6} = \frac{7c - 12b}{6}$$

$$a = \frac{7c - 12b}{6}$$

9) Solve for b:  $\frac{4b}{3} - 5c = 2c + 3$

$$\frac{+5c \quad +5c}{\phantom{4b} \phantom{2c}}$$

$$3 \cdot \frac{4b}{3} = (7c + 3)(3)$$

$$\frac{4b}{4} = \frac{21c + 9}{4}$$

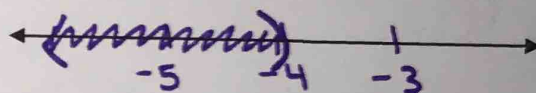
$$b = \frac{21c + 9}{4}$$

10) Solve and graph the solution:  $-5x - 2 > 18$

$$\frac{+2 \quad +2}{\phantom{-5x} \phantom{18}}$$

$$\frac{-5x}{-5} > \frac{20}{-5}$$

$$x < -4$$

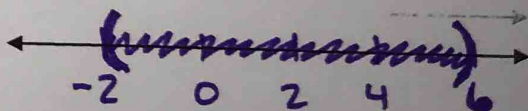


11) Solve and graph the solution:  $-12 < 2x - 8 < 4$

$$\frac{+8 \quad +8 \quad +8}{\phantom{-12} \phantom{4}}$$

$$\frac{-4}{2} < \frac{2x}{2} < \frac{12}{2}$$

$$-2 < x < 6$$

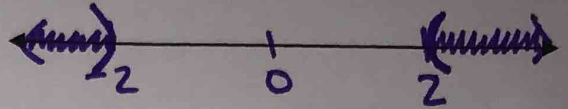


12) Solve and graph:  $-3x + 8 > 14$  or  $7x - 3 > 11$

$$\frac{-3x + 8 > 14}{-8 \quad -8} \quad \text{or} \quad \frac{7x - 3 > 11}{+3 \quad +3}$$

$$\frac{-3x > 6}{-3 \quad -3} \quad \frac{7x > 14}{7 \quad 7}$$

$$\boxed{x < -2} \quad \text{or} \quad \boxed{x > 2}$$



13) Simplify:  $\frac{2}{3} \left( -\frac{1}{4}x - \frac{2}{5} \right) + \frac{3}{4}$

$$= -\frac{2}{12}x - \frac{4}{15} + \frac{3}{4}$$

$$= -\frac{1}{6}x - \frac{16}{60} + \frac{45}{60}$$

$$= \boxed{-\frac{1}{6}x + \frac{29}{60}}$$

14) Write any two step equation where the solution is  $x = 2$ .

Any two step equation where  $x = 2$

$$\text{Ex: } \frac{4x - 3 = 5}{+3 \quad +3}$$

$$\frac{4x}{4} = \frac{8}{4}$$

$$\boxed{x = 2}$$