

Name:

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Teacher:

Period:

Date:

# Algebra 1

## Show All Work For Credit

### 1) *Evaluating Expressions*

Evaluate:  $(x - 3)^2 + 2x - 4$  for  $x = 5$

### 2) *Integer Operations*

a)  $-13 + 5$

b)  $-2 - (-7)$

c)  $-5(-3)$

d)  $-24 \div 6$

### 3) *Two-Step Equations*

Solve:  $x + 3 = -2$

Solve:  $-3x + 5 = 11$

### 4) *Simplify Expressions*

Simplify:  $4x - 3(2x + 5)$

Simplify:  $14m - 3n + 15m + 7n$

5) *Multi-Step Equations*

Solve:  $5x - 7 = 7x - 13$

6) *Translate Expressions*

Write in math:

Seven more than the product of four and a number.

Solve:

Six times a number is three less than thirty-nine.

7) *Fraction Busters*

Solve:  $\frac{2}{7}x + \frac{10}{3} = \frac{3}{21}$

8) *Proportions:*

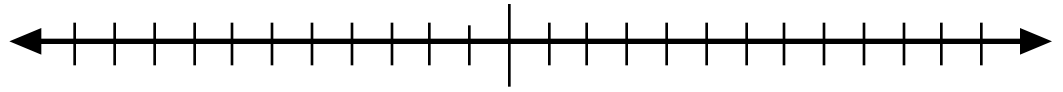
Solve:

$$\frac{7}{x-4} = \frac{42}{12}$$

7 monkeys eat 42 slices of bacon. How many slices would 21 monkeys eat?

9) *Inequalities:*

Graph:  $4x - 8 \geq 12$



10) *Single Variable Word Problems*

Mr. Klein is three times older than Mr. Meyer. Together they are 88 years old. How old are each of them?

Meyer	Klein
<input type="text"/>	<input type="text"/>

11) *Rules of Exponents:*

a)  $(5m^2n^5)^2$

b)  $(ab^2)(a^5b)(b^7a)(ab)$

c)  $\frac{35x^3y^7}{7x^8y^4}$

d)  $4^{-3}$

12) *Descending Order:*

Arrange in descending order:  $5x^3 - 2x^5 + x^7 - 3x$

13) *Polynomial Ops:*

Add:  $(2x^2 - 5x + 3) + (3x^2 + 7x - 5)$

Subtract:  $(7x^2 - 5x + 8) - (5 + 2x^2 - 7x)$

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14) *Polynomial Multiplication:*

Multiply:  $(2x + 3)(x^2 - 3x + 4)$

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15) *Polynomial Factors:*

Factor:  $12b^7 + 9b^2 - 27b^{10} + 9b^5$

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16) *Solving Polynomials:*

Solve:  $x^2 + 13x + 40 = 0$

17) *Scientific Notation:*

Write in scientific notation:

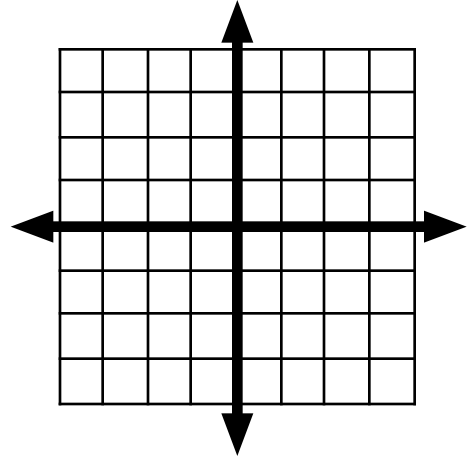
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Write in standard notation:

$5.94 \times 10^{-6}$

18) *Graphing Lines*

Graph:  $y = 2x - 4$



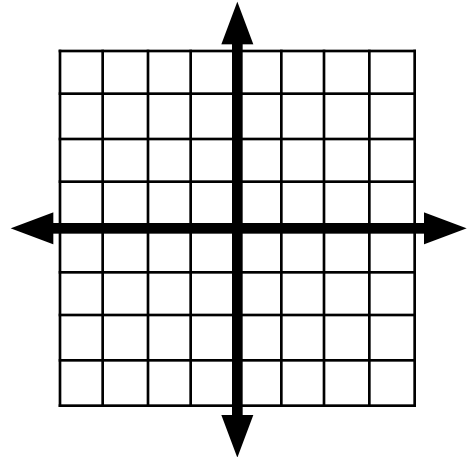
19) *Finding Slope*

What is the slope between the points:

**(3,6)** and **(1,4)**

Graph the line.

slope



20) *Slope-Intercept Lines*

Find the equation, given:

**Slope = -4**

**Y-Intercept = 3**

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21) *Point-Slope Lines*

Find the equation, given:

**Point = (4,2)**

**Slope = -2**

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22) *Point-Point Lines*

Find the equation, given:

**Point = (2,1)**

**Point = (8,25)**

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23) *Point Test*

Is the point (5,9) on the line  $3y - 5x = 2$

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24) *Parallel Lines*

Are these lines parallel? *Why?*

$$y = 3x - 2$$

$$y = 4x - 2$$

Find a line parallel to:  $y = 3x - 4$   
that goes through: (1,5)

25) *Perpendicular Lines*

Are these lines perpendicular? *Why?*

$$y = -\frac{2}{5}x + 4$$

$$y = \frac{5}{2}x - 4$$

Find a line perpendicular to:  $y = -\frac{3}{4}x - 4$   
that goes through: (9,1)

26) *Systems of Equations*

Where do these lines cross?

$$2y + 7x = 17$$

$$y = 4x - 14$$

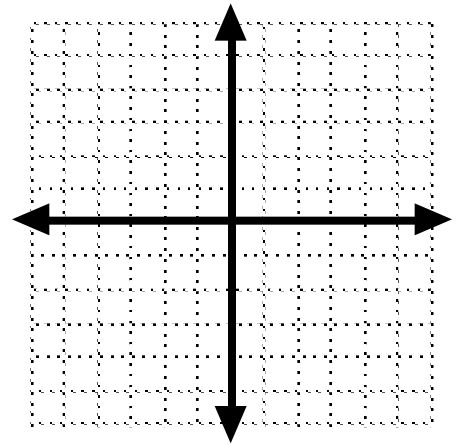
27) *Inequality Intersections*

Graph:

You must test one point for each.

$$y > 4x - 1$$

$$y \geq x - 2$$



28) *Linear Word Problems*

The sum of two numbers is 49. Their difference is 19. What are they?

29) *Completing the Square:*

Solve by completing the square:  $x^2 + 7x - 5 = 0$

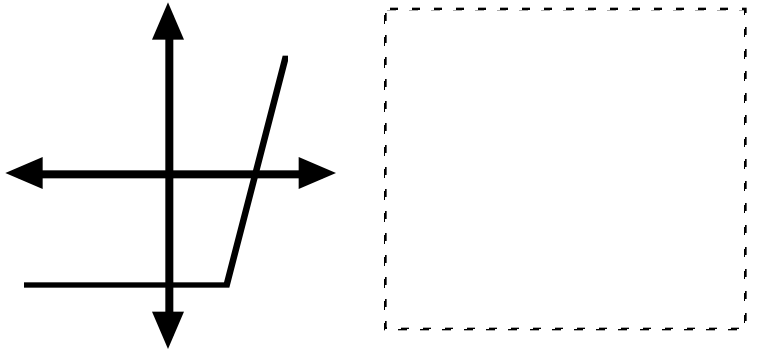
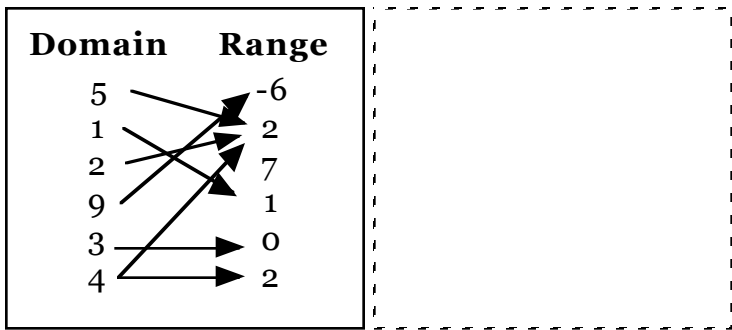
30) *Quadratic Formula:*

Solve using the quadratic formula:  $4x^2 - 4x + 1 = 0$



31) *Functions*

Is this a function? Why or why not?



32) *Simplifying Radicals*

$$\sqrt{56}$$

$$\sqrt{80}$$

33) *Simplifying Radical Expressions*

$$\sqrt{27} + \sqrt{12}$$

$$3\sqrt{18} - 3\sqrt{8}$$

34) *Adding/Subtracting Rationals*

$$\frac{x^2 + 3x}{x^2 + 9x + 14} + \frac{7x + 21}{x^2 + 9x + 14} =$$

$$\frac{6x + 5}{x + 1} - \frac{3x + 2}{x + 1} =$$

35) *Multiplying/Dividing Rationals*

$$\frac{x - 8}{x^2 + 12x + 20} \cdot \frac{x^2 + 9x + 14}{x + 7} =$$

$$\frac{x^2 + 5x + 6}{x - 1} \div \frac{x + 3}{x - 1} =$$