Name: _____ **620 Concept Practice for Final Review**

1. Solve each equation.

a.) $3x + 2 = 11$

b.) $9(2x - 8) = 56$

c.) $5x + 4 = 10x - 21$

d.) $3x + 8 + 2x = 7x + 12$

e.) $3(4x - 1) = 12x + 7$

f.) $|x-9| = 11$

g.) $2x^2 = 72$

h.) $5(2x - 1) + 10 = 3x - 4(7-2x)$

2.) Simplify each expression. Use P-E-M/D-A/S.

a.) $5 + 12 - 19$

b.) $5 - 3 \cdot 12(4 - 5)^3$

c.) $\dfrac{12 \div 3 \cdot 7}{(3 - 6) \cdot 2}$

d.) $7 - 11 \cdot 3 + |9 - 18| \div 3$

e.) $\sqrt{(29 - 4)} + 18 \div 3 \cdot 4$

f.) $-2(12 - 10)^2 - (5 \cdot 2 - 9)^3$

3. Find the slope between the following pairs of points. Determine if the line is horizontal, vertical or neither. Find the equation of the line that contains each pair of points.

a.) (2, 3) and (5, –9)

b.) (7, 7) and (5, 7)

c.) (–6, – 4) and (–3, 5)

d.) (0, 0) and (0, 8)

4. Simplify each radical expression.

a.) $\sqrt{4^2}$

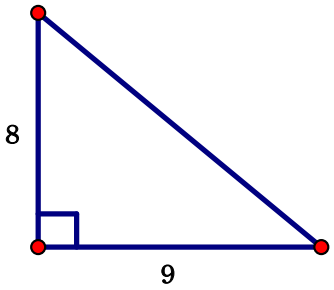
b.) $\sqrt{25-16}$

c.) $\sqrt{10^2+5^2}$

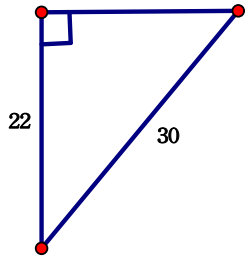
d.) $\sqrt{128}$ (use a factor tree)

5. Solve the missing side of each triangle. Use the Pythagorean Theorem.

a.)



b.)



6. Evaluate each expression.

a.) 3x – 7y for x= –2 and y = 3

b.) $\frac{4(a+b)}{b}$, *for* $a=6$ *and* $b=-2$

c.) $2x^3 + 8y$ for x = –6 and y = –13

d.) $\sqrt{\frac{2a+b}{9b}}$ *for* $a=25$ *and* $b=3$

7. Evaluate each function.

$f(x) = \frac{1}{2}x - 10$ $g(x) = -4x + 12$ $h(x) = |x - 3|$

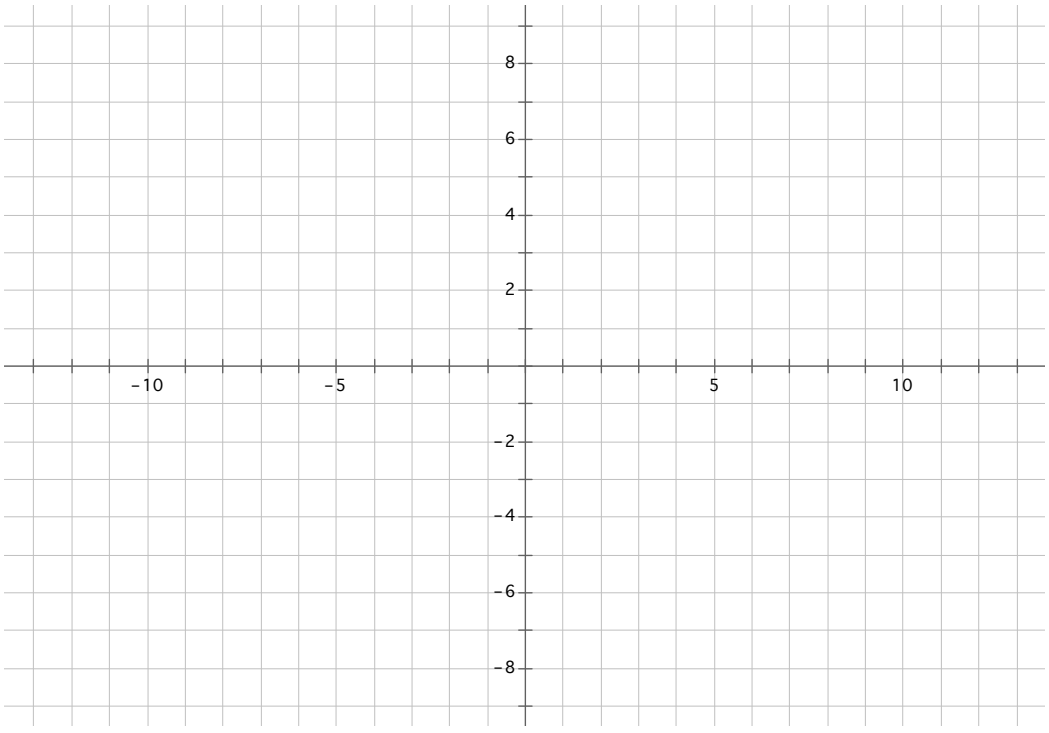
a.) $f(20)$ b.) $h(-15)$

c.) $g(8)$ d.) $g(f(2))$ *work inside the parentheses first.

8. Graph the following lines on the coordinate plane. What is their point of intersection?

$y = 2/3\,x + 4$

$4x + 7y = 21$



9. Solve each equation for the indicated variable.

a.) $7x - 2y = 12$ solve for x

b.) $d = r * t$ solve for t

c.) $2\pi r = C$ solve for r

d.) $D = \frac{m}{V}$ solve for V

10. Determine if each table represents a function. If so, is it a linear function? If so, determine an equation that will generate the tables.

x	y
2	20
4	13
6	6
8	-1

x	y
2	1
7	5
9	11
12	17

11. Determine a rule that will generate the following function.

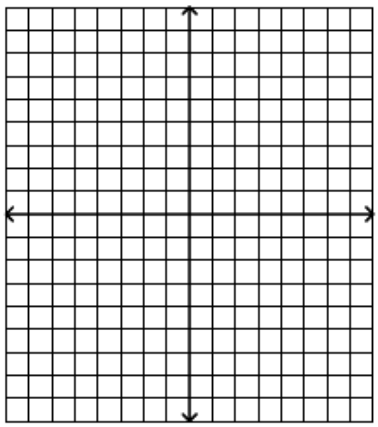
x	y
3	11
5	16
7	21
9	26
11	31

12. Graph each of the following equations. Determine the slope and y-intercept for each line.

(1)

$y = 4x + 3$

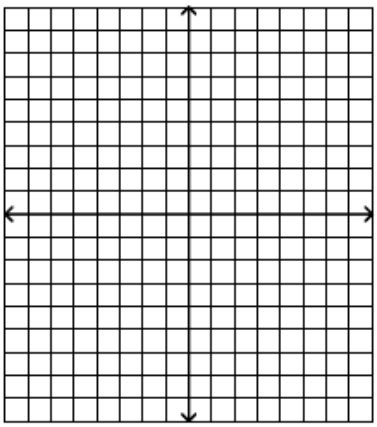
x	y
-2	
$-1\frac{1}{2}$	
-1	
0	



(4)

$y = \frac{1}{4}x - 6$

x	y
-2	
-1	
2	
7	



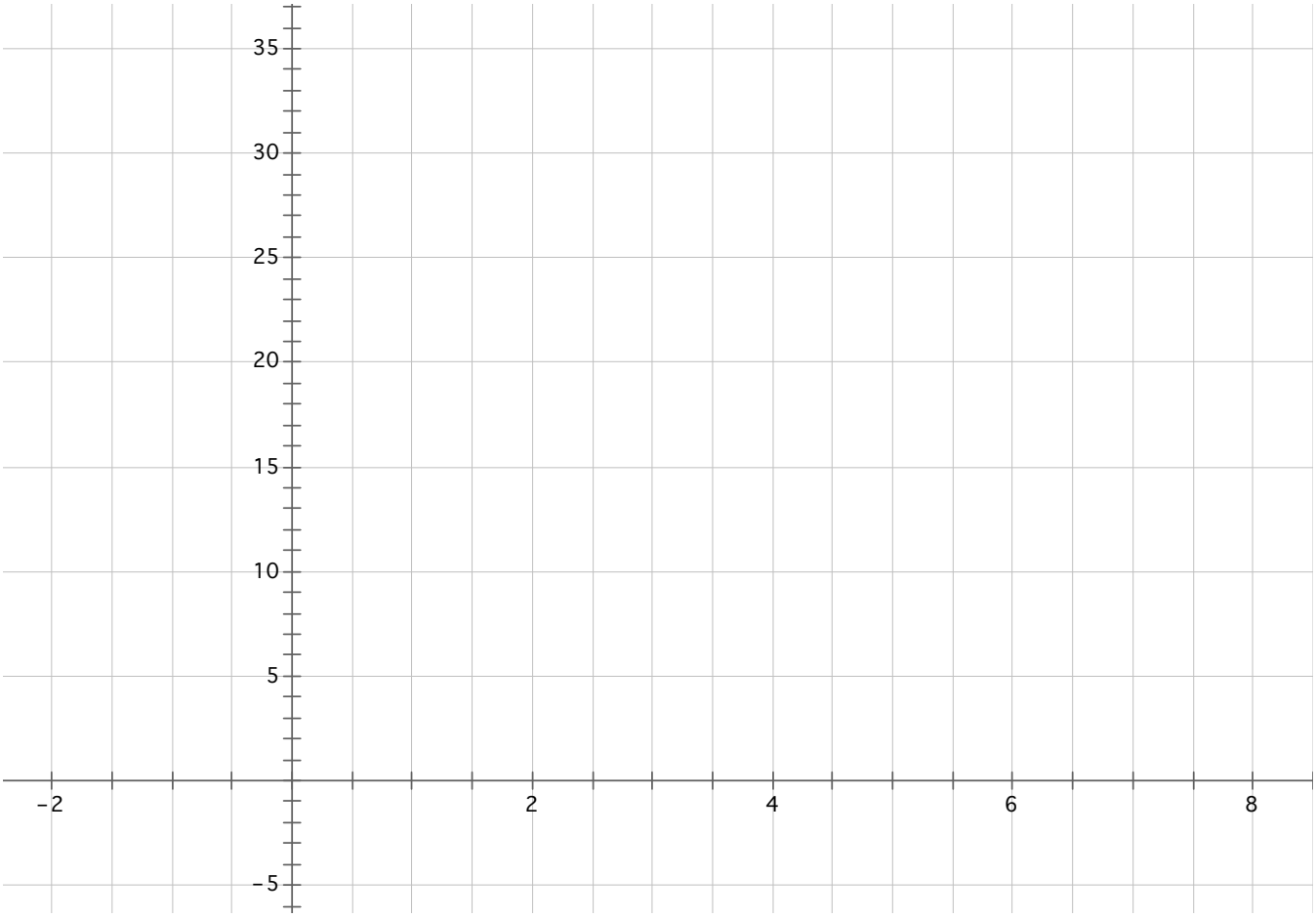
13. The cost of an ice cream sundae is given by the formula C(s) = 1.25s + 5.00. In this formula, C(s) represents the cost of the ice cream sundae and s is the number of scoops of ice cream.

a.) What does the slope represent?

b.) If I get a 5 scoop sundae, how much will it cost?

c.) If I spend $30 on my sundae, how many scoops did I get?

14. a.) Graph the following points on the grid.
(–1, ½), (0, 0), (1, 2), (2, 4), (3, 8), (4, 16), (5, 32)



b.) Does the graph appear to be linear or exponential? Explain.

c.) Determine an equation that would generate the graph.

15. Simplify the following expressions. Use the properties of exponents and radicals.

a.) $3x^3 \cdot 2x^5$

b.) $\dfrac{8y^4 \cdot 3y^2 - 5y^6}{2y^3}$

c.) $9x^2y(4xy^5 + 2x^7y^3)$

d.) $(4x^6z)^3$

e.) $4y^3 + 8y - 7y^3 - 2y$

f.) $(5x^2 \cdot y^4)^3 \cdot 2xy^7$

g.) $\dfrac{3x^{-4}}{15x^8}$

h.) $5^{-3} \cdot 2^6 \div 4^{-1}$

i.) $\sqrt{x^4y^5}$

j.) $\sqrt{36 \cdot 72} + \sqrt{(8)^2}$

k.) $\sqrt{6} + 3\sqrt{6} - 8\sqrt{6}$

l.) $\dfrac{\sqrt{9 \cdot 36}}{\sqrt{8} \cdot \sqrt{2}}$

16. A hardware store sells extension ladders. A 16-ft ladder costs $50 and the price increases $7.50 for each additional foot of ladder length.

a.) Write an equation that describes the cost (y) of a ladder that is x feet long.

b.) How much would a 28 foot ladder cost?

17. Find the equation of a line containing the points (7, 5) and (–2, 3).

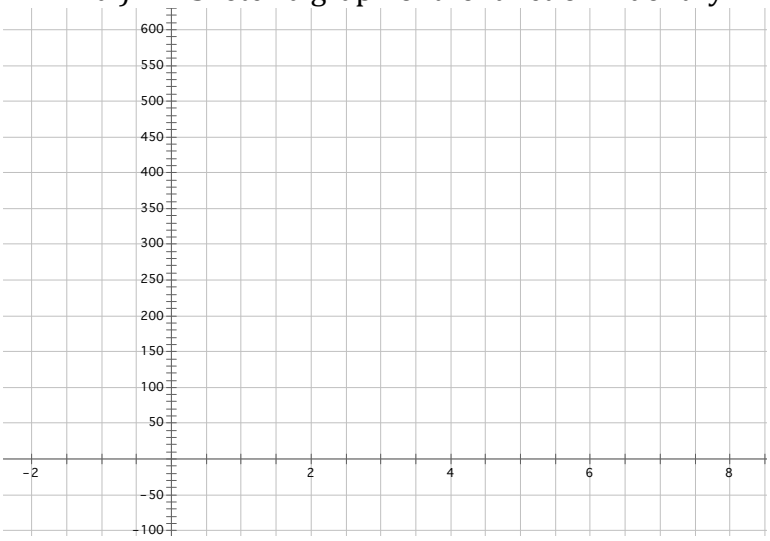
18. A local company receives hundreds of applications for each job opening it has. Their selection process is to review the applications and discard 50% of them. Then this is repeated until only one applicant is left. Let n= the number of times that half the applications are discarded.

a.) Write an expression in the form $a \cdot b^x$ to describe the number of people left after the applications have been reviewed n times.

b.) If 512 people apply for a job how many are left when n = 4?

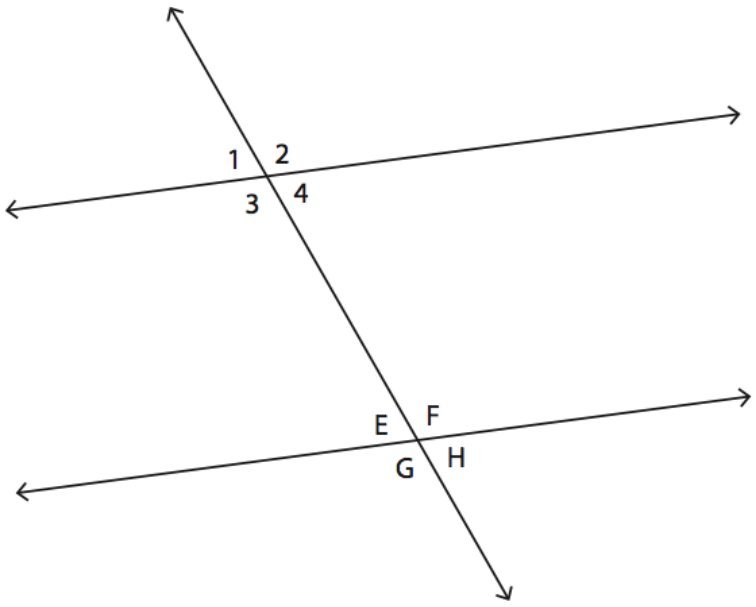
c.) If 512 people apply, what is the value of n when one person is left?

d.) Sketch a graph of the function. Identify if it is exponential, linear or neither.



Name:_____ Final Exam Review Day 3 HW

Write the angle relationship for each pair of angles.



1) ∠1 and ∠H are _____

2) ∠4 and ∠F are _____

3) ∠G and ∠2 are _____

4) ∠3 and ∠F are _____

5) ∠2 and ∠H are _____

6) ∠1 and ∠G are _____

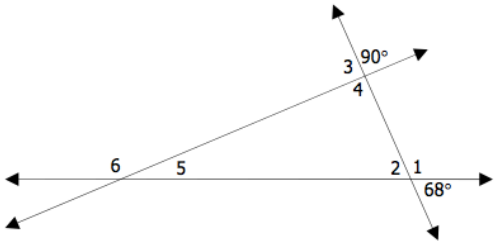
7) ∠3 and ∠E are _____

8) ∠4 and ∠E are _____

II. Find the measure of each angle.

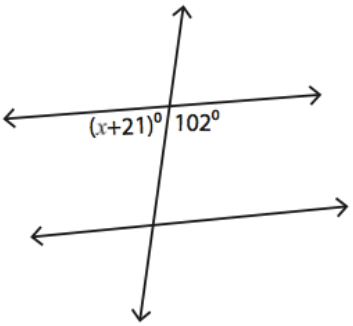
21) $\angle 1$ 22) $\angle 2$ 23) $\angle 3$

24) $\angle 4$ 25) $\angle 5$ 26) $\angle 6$



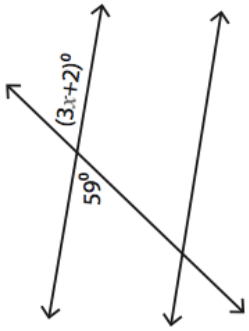
Find the value of x.

1)



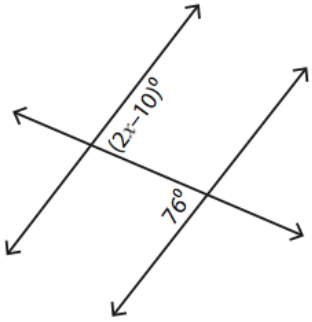
$x =$_____

2)



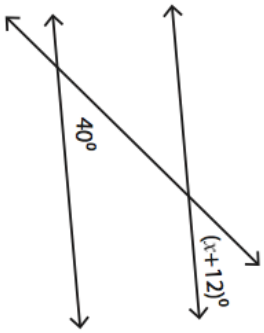
$x =$_____

3)



$x =$_____

4)



$x =$_____