Honors Algebra 1 & Honors Geometry Name_____

Summer Assignment - Part 1

Date_____

Please submit this assignment to room 603 during Freshman Orientation or by August 1.

Directions:

Step 1

Students entering Honors Algebra I, please complete Sections 1 - 4.
Students entering Honors Geometry, please complete ALL Sections.

Step 2

Using the included answer key, grade your work.

Step 3

Complete the Analysis Form to determine your strengthes and weaknesses.

Step 4

Complete Summer Assignment - Part 2 for each identified weakness on the Analys

Section 1: Equations and Inequalities

Solve each equation.

1) $-5(1-5b)+5(-4b+5)=4b+8+1$

2) $3(x+8)-(x+5)=2x-8$

Solve each equation for the indicated variable.

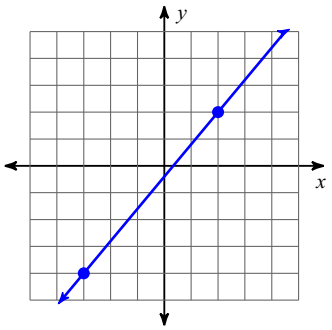
3) $z=mx-y$, for x

4) $z=\dfrac{x+y}{mx}$, for x

Section 2: Linear Equations

Find the slope of each line.

5)



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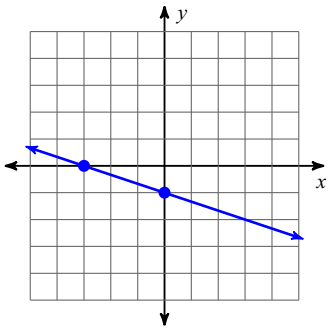


Find the slope of the line through each pair of points.

7) $(-20, 20), (-14, 3)$

8) $(-16, -12), (4, -12)$

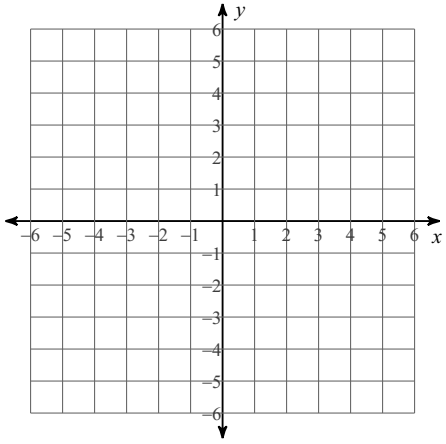
Find the slope of each line.

9) $y = 5$

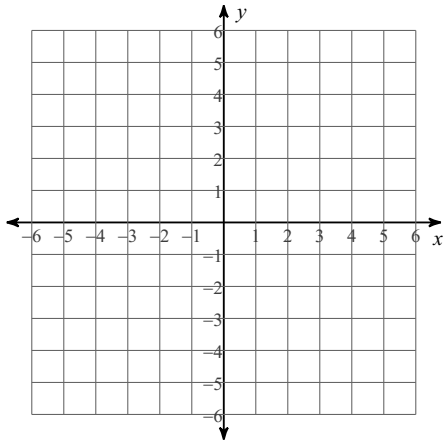
10) $y = -2x - 5$

Sketch the graph of each line.

11) $1 = -\frac{1}{4}y + \frac{1}{8}x$



12) $-6 - 2x = 0$



Section 3: Systems of Equations and Inequalities
Solve each system by substitution.

13) $2x - y = 6$
$y = 4x - 8$

14) $6x + 4y = 18$
$y = 3x - 9$

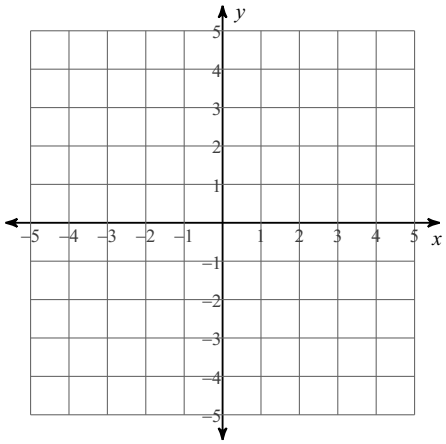
Solve each system by elimination.

15) $-20x + 10 = 10y$
$-10x + 5 - 5y = 0$

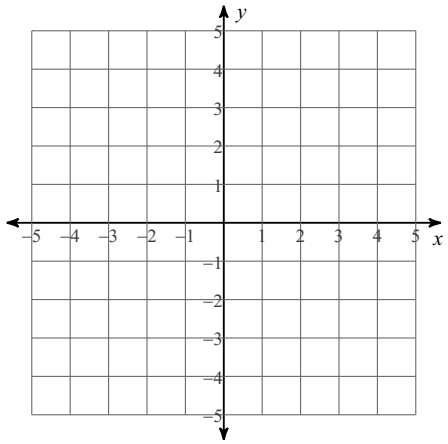
16) $-27 + 6y = -7x$
$6 - 24y + 6x = 0$

Solve each system by graphing.

17) $2y - 8 = 0$
$-2 = -y + x$

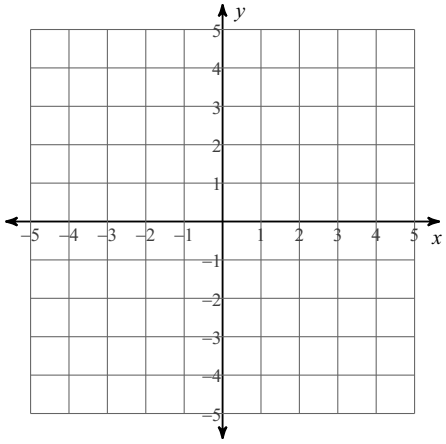


18) $y = 4x - 3$
$-2x = y - 3$

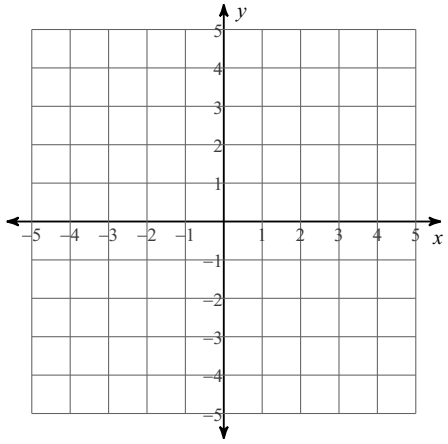


Sketch the solution to each system of inequalities.

19) $y > -2x - 3$
$y \geq 3x + 2$



20) $x + 3y \geq 9$
$5x - 3y \geq 9$



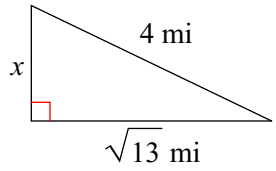
Section 4: Distance Formula and Pythagorean Theorem
Find the distance between each pair of points.

21) $(-8, 6),\ (2, -4)$

22) $(-3, 6),\ (5, 6)$

Find the missing side of each triangle. Leave your answers in simplest radical form.

23)



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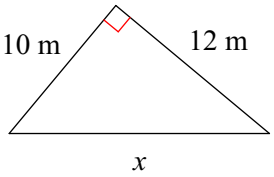
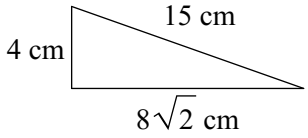


State if each triangle is a right triangle.

25)



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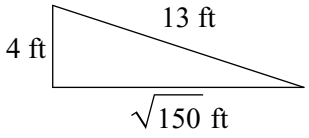
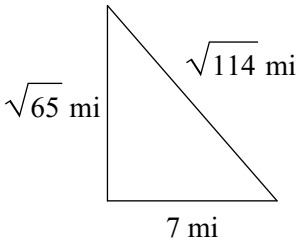


State if each triangle is acute, obtuse, or right.

27)



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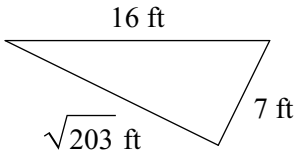


Section 5: Radical Expressions and Equations
Simplify.

29) $-8\sqrt{512r^3}$

30) $5\sqrt{63x^3}$

31) $3\sqrt{6} + 3\sqrt{54}$

32) $3\sqrt{24} - \sqrt{24}$

33) $\sqrt{3}(3 + \sqrt{5})$

34) $-3\sqrt{5}(5\sqrt{5} + 3)$

35) $\left(-1-4\sqrt{2}\right)\left(-3+\sqrt{2}\right)$

36) $\left(-5+\sqrt{3}\right)\left(2+3\sqrt{3}\right)$

37) $\dfrac{3\sqrt{4}}{2\sqrt{5}}$

38) $\dfrac{2}{5+3\sqrt{2}}$

Solve each equation. Remember to check for extraneous solutions.

39) $\sqrt{k-3}-1=4$

40) $\sqrt{8-p}=\sqrt{\dfrac{p}{7}}$

Section 6: Quadratic Expressions and Equations
Factor each completely.

41) $2x^2+34x+144$

42) x^2-10x

Solve each equation by factoring. Leave answers in exact form. Do NOT approximate!

43) $p^2+p=12$

44) $x^2-3x=0$

Solve each equation by taking square roots.

45) $16n^2-9=27$

46) $7b^2-9=-2$

Solve each equation by completing the square.

47) $n^2+20n-10=0$

48) $r^2+18r+55=0$

Solve each equation with the quadratic formula.

49) $4b^2-12b-72=0$

50) $3n^2-9n-6=0$

Answers to Summer Assignment - Part 1

1) $\{-11\}$

2) No solution.

3) $x = \dfrac{z + y}{m}$

4) $x = \dfrac{y}{zm - 1}$

5) $\dfrac{6}{5}$

6) $-\dfrac{1}{3}$

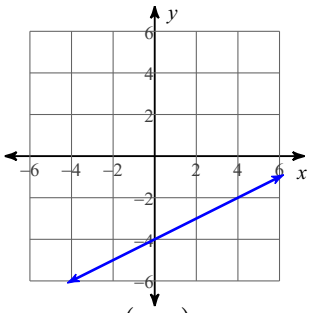
7) $-\dfrac{17}{6}$

8) 0

9) 0

10) -2

11)



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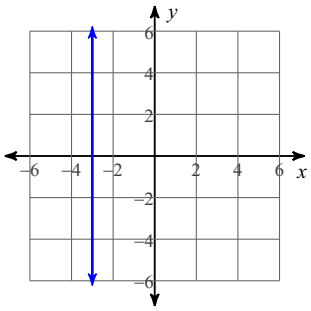


13) $(1, -4)$

14) $(3, 0)$

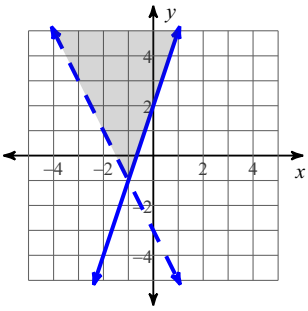
15) Infinite number of solutions

16) $(3, 1)$

17) $(2, 4)$

18) $(1, 1)$

19)



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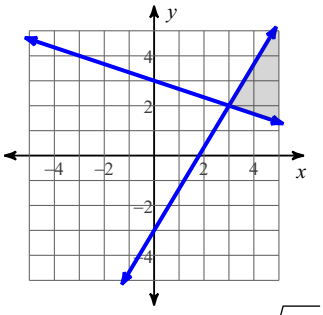

21) $10\sqrt{2}$

22) 8

23) $\sqrt{3}$ mi

24) $2\sqrt{61}$ m

25) No

26) No

27) Right

28) Obtuse

29) $-128r\sqrt{2r}$

30) $15x\sqrt{7x}$

31) $12\sqrt{6}$

32) $4\sqrt{6}$

33) $3\sqrt{3} + \sqrt{15}$

34) $-75 - 9\sqrt{5}$

35) $-5 + 11\sqrt{2}$

36) $-1 - 13\sqrt{3}$

37) $\dfrac{3\sqrt{5}}{5}$

38) $\dfrac{10 - 6\sqrt{2}}{7}$

39) $\{28\}$

40) $\{7\}$

41) $2(x + 8)(x + 9)$

42) $x(x - 10)$

43) $\{-4, 3\}$

44) $\{3, 0\}$

45) $\left\{1\dfrac{1}{2}, -1\dfrac{1}{2}\right\}$

46) $\{1, -1\}$

47) $\{-10 + \sqrt{110}, -10 - \sqrt{110}\}$

48) $\{-9 + \sqrt{26}, -9 - \sqrt{26}\}$

49) $\{6, -3\}$

50) $\left\{\dfrac{3 + \sqrt{17}}{2}, \dfrac{3 - \sqrt{17}}{2}\right\}$