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 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.

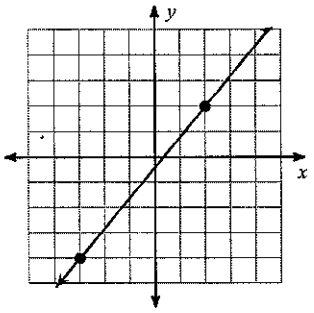
3) $z=mx-y$, for x

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

Section 2: Linear Equations

Find the slope of each line.

5)



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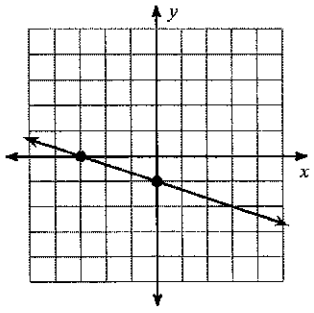


Find the slope of the line through each pair of points.

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

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

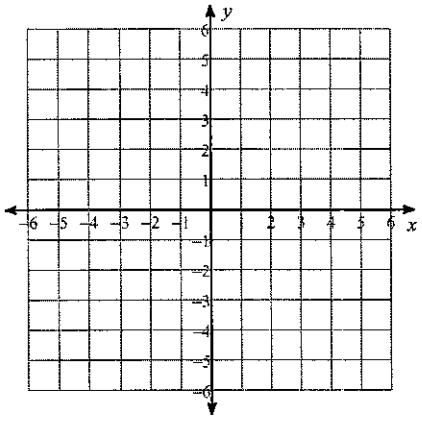
Find the slope of each line.

9) $y = 5$

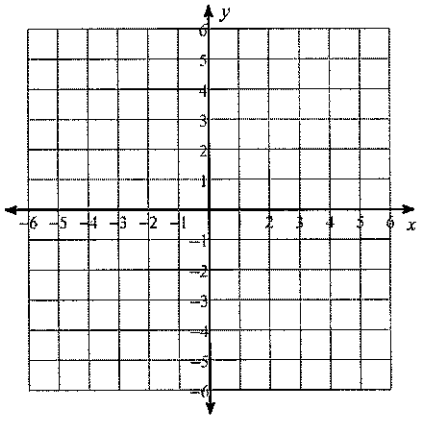
10) $y = -2x - 5$

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

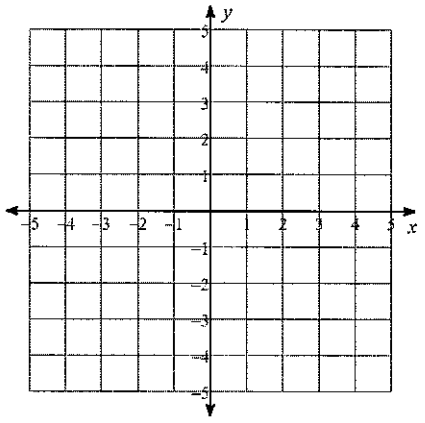
Solve each system by elimination.

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

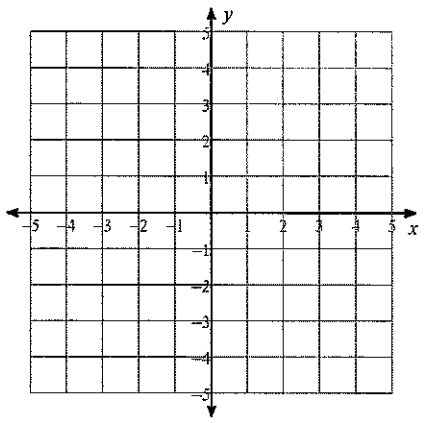
16) $-27 + 6y = -7x$
$6 - 24y + 6x = 0$

Solve each system by graphing.

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

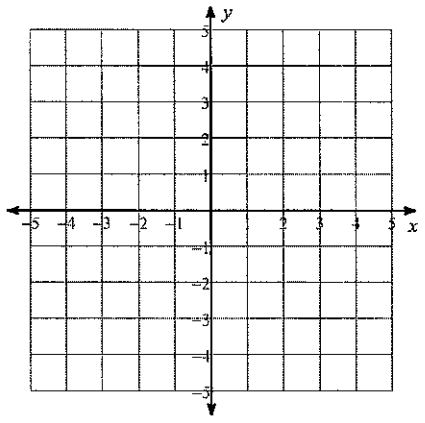


18) $y = 4x - 3$
$-2x = y - 3$

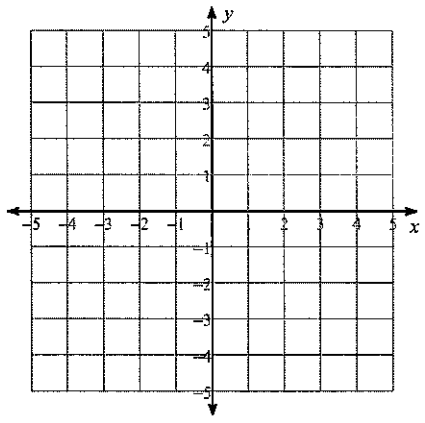


Sketch the solution to each system of inequalities.

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



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



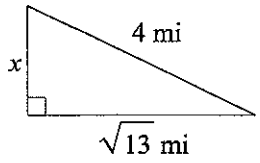
Section 4: Distance Formula and Pythagorean Theorem
Find the distance between each pair of points.

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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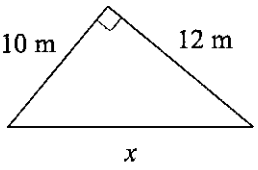
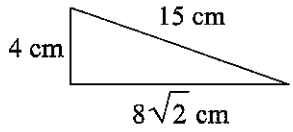


State if each triangle is a right triangle.

25)



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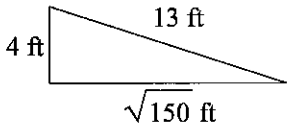
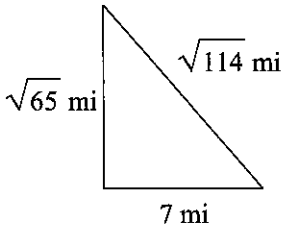


State if each triangle is acute, obtuse, or right.

27)



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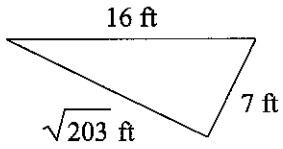


Section 5: Radical Expressions and Equations
Simplify.

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

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

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

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

Solve each equation. Remember to check for extraneous solutions.

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

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

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) $x = \frac{z+y}{m}$

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

5) $\frac{6}{5}$

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

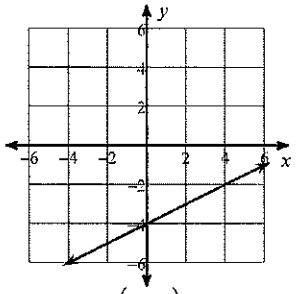
7) $-\frac{17}{6}$

8) 0

9) 0

10) –2

11)



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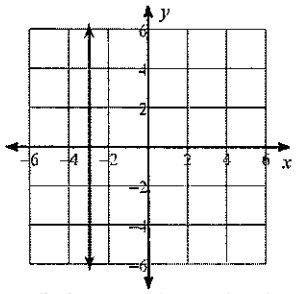


13) $(1, -4)$

14) $(3, 0)$

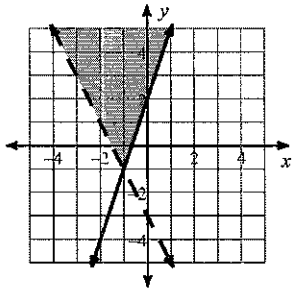
15) Infinite number of solutions

16) $(3, 1)$

17) $(2, 4)$

18) $(1, 1)$

19)



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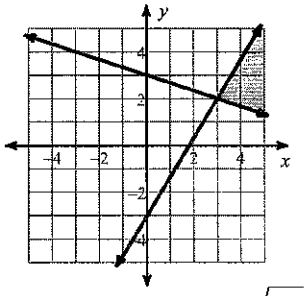


21) $10\sqrt{2}$

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) $\frac{3\sqrt{5}}{5}$

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

39) $\{28\}$

40) $\{7\}$

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

42) $x(x - 10)$

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

44) $\{3, 0\}$

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

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

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

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

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

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

Analysis of Part 1:

1. After grading your work from part one, shade LIGHTLY each problem you did not solve correctly (for ANY reason).

2. Determine which areas are your strengths and your weaknesses. For each area of weakness, spend some time reviewing the concepts using the included links. Please note that the links will take you to a selection of concepts for that specific topic. Each video is approximately 5 minutes long... Choose to view only the ones that will help you show mastery of the content. For some concepts, you may only need to watch one or two videos, where with other concepts, you may need to watch many to "get" the concept.

3. Move to Summer Assignment – Part 2. Only solve the problems from YOUR identified areas of weakness. There is an answer key for you to check your work. If you need additional practice in any of your identified areas of weakness, email Miss Kline at Karen.kline@cobbk12.org asking for additional practice. Miss Kline will send you additional practice within a few days of your request, excluding the last week of June.

Section 1: Equations and Inequalities		
Multi-Step Equations	1	2
Literal Equations	3	4

Online Review Resources:

- https://www.virtualnerd.com/algebra-1/linear-equations-solve/one-step
- https://www.virtualnerd.com/algebra-1/linear-equations-solve/two-or-multi-step
- https://www.virtualnerd.com/algebra-1/linear-equations-solve/variables-both-sides-equations
- https://www.virtualnerd.com/algebra-1/linear-equations-solve/isolate-variables-formulas-examples

Section 2: Linear Equations		
Slope given a line	5	6
Slope given 2 points	7	8
Slope given an equation	9	10
Graph a line	11	12

Online Review Resources:

- https://www.virtualnerd.com/algebra-1/linear-equation-analysis/slope-rate-of-change
- https://www.virtualnerd.com/algebra-1/linear-equation-analysis/intercept
- https://www.virtualnerd.com/algebra-1/linear-equation-analysis/slope-intercept-form
- https://www.virtualnerd.com/algebra-1/linear-equation-analysis/slope-intercept-form/slope-intercept-form-examples
- https://www.virtualnerd.com/algebra-1/linear-equation-analysis/point-slope-standard-form/standard-form-examples

Section 3: Systems of Equations and Inequalities		
Solve by Substitution	13	14
Solve by Elimination	15	16
Solve by Graphing	17	18
Solve System of Inequalities	19	20

Online Review Resources:

- https://www.virtualnerd.com/algebra-1/systems-equations-inequalities/substitution
- https://www.virtualnerd.com/algebra-1/systems-equations-inequalities/elimination
- https://www.virtualnerd.com/algebra-1/systems-equations-inequalities/graphing
- https://www.virtualnerd.com/algebra-1/systems-equations-inequalities/special-cases
- https://www.virtualnerd.com/algebra-1/systems-equations-inequalities/inequalities

Section 4: Distance Formula and Pythagorean Theorem		
Distance Formula	21	22
Find missing side of right triangle	23	24
Determine if a triangle is right	25	26
Classify the triangle by it's angles	27	28

Online Review Resources:

- https://www.virtualnerd.com/algebra-1/radical-expressions-equations/distance-midpoint-formulas/distance-formula
- https://www.virtualnerd.com/algebra-1/radical-expressions-equations/pythagorean-theorem/pythagorean-theorem-examples

Section 5: Radical Expressions and Equations				
Simplify Radical Expressions	29		30	
Add/Subtract Radical Expressions	31		32	
Multiply Radical Expressions	33	34	35	36
Divide Radical Expressions	37		38	

Online Review Resources:

- https://www.virtualnerd.com/algebra-1/radical-expressions-equations/simplify
- https://www.virtualnerd.com/algebra-1/radical-expressions-equations/operations
- https://www.virtualnerd.com/algebra-1/radical-expressions-equations/solve

Section 6: Quadratic Expressions and Equations		
Factor quadratic expression	41	42
Solve by factoring	43	44
Solve by square root method	45	46
Solve by completing the square	47	48
Solve by quadratic formula	49	50

Online Review Resources:

- https://www.virtualnerd.com/algebra-1/polynomials-and-factoring/trinomial-factorization
- https://www.virtualnerd.com/algebra-1/polynomials-and-factoring/factoring-special-products
- https://www.virtualnerd.com/algebra-1/quadratic-equations-functions/square-roots-and-factoring
- https://www.virtualnerd.com/algebra-1/quadratic-equations-functions/completing-the-square
- https://www.virtualnerd.com/algebra-1/quadratic-equations-functions/discriminant-quadratic-formula

Areas of Strength:

Areas of Weakness:

After viewing the online resources and completing problems from section 2, complete the following:

1. After working through these materials, I now am confident in ...

   Because...

2. I'm still not sure about...

3. My goals for math this year are...

   I plan to reach my goals by...

4. My biggest fear for math this year is...

   I plan to overcome this by...

Honors Algebra 1 & Honors Geometry Name_____

Summer Assignment - Part 2

Date_____

Section 1: Equations and Inequalities
Solve each equation.

1) $-8-2(-3-5p)=-2(-5p+6)-5p$

2) $3(7v-1)=4+7(4v+5)$

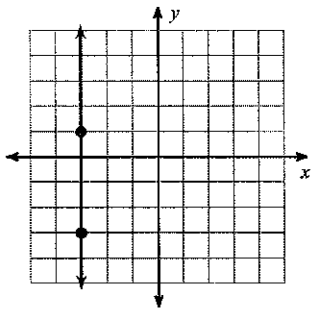
Solve each equation for the indicated variable.

3) $\frac{k}{a}=w+v$, for a

4) $z=\frac{a+b}{ma}$, for a

Section 2: Linear Equations
Find the slope of each line.

5)



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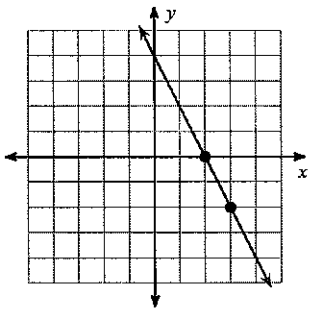


Find the slope of the line through each pair of points.

7) $(10,-13),(-5,17)$

8) $(17,12),(-3,-3)$

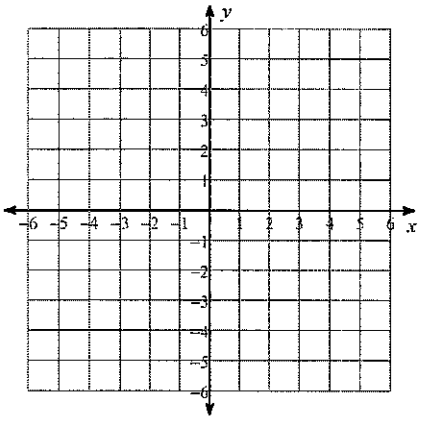
Find the slope of each line.

9) $y = -\frac{4}{3}x - 1$

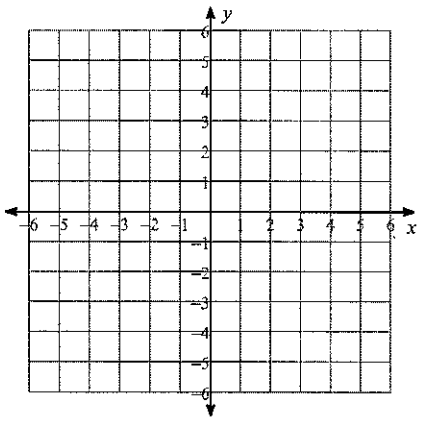
10) $y = -4x + 1$

Sketch the graph of each line.

11) $10x + 8y = 16$



12) $-y + 5 = 0$



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

13) $2x - 7y = -16$
$y = x - 2$

14) $5x - y = -5$
$y = 5x + 5$

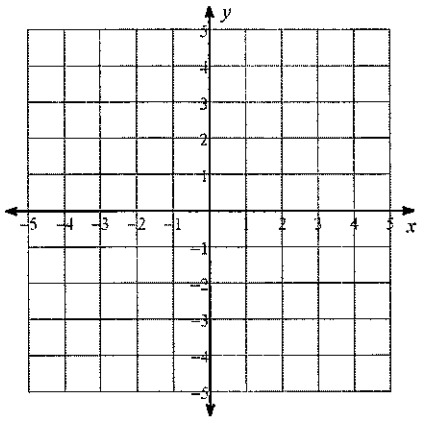
Solve each system by elimination.

15) $-3x + 29 = 8y$
$-x - y + 8 = 0$

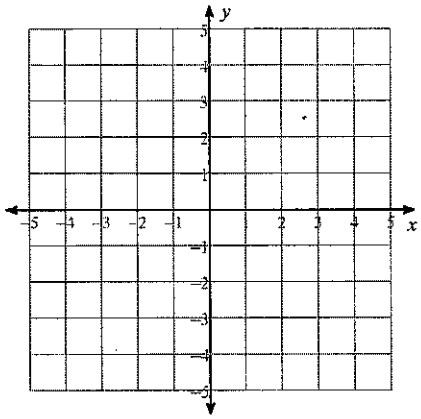
16) $8y - 2 = 6x$
$0 = -10x + 20 + 18y$

Solve each system by graphing.

17) $-8 + 4y - 2x = 0$
$-12 = 4y - 7x$

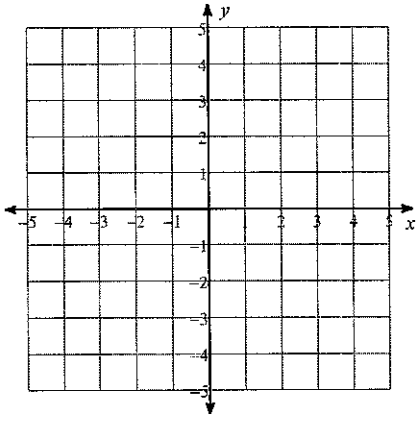


18) $0 = -5x - 4 + 2y$
$1 + \frac{5}{6}x - \frac{1}{3}y = 0$

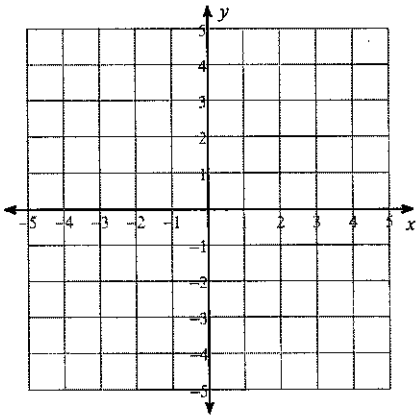


Sketch the solution to each system of inequalities.

19) $y > \frac{1}{2}x + 2$
$y > \frac{1}{2}x - 2$



20) $3x + y < -2$
$x - y > -2$



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

21) $(-5, 5), (1, 3)$

22) $(2, -3), (-4, 0)$

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

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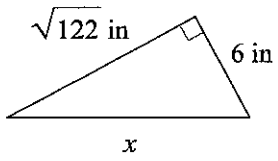

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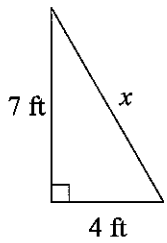

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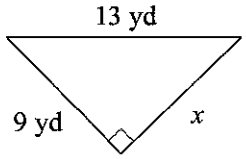

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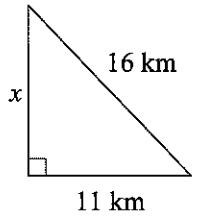
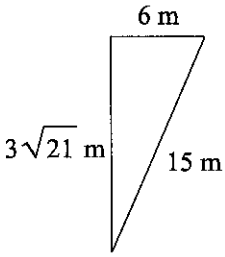


State if each triangle is a right triangle.

27)



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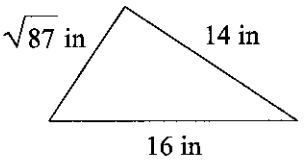
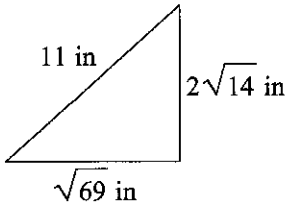
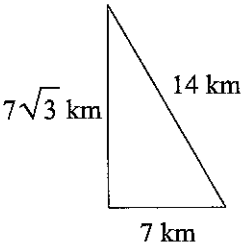


State if each triangle is acute, obtuse, or right.

29)



30)



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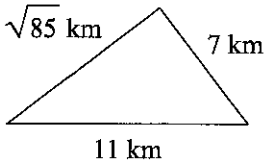

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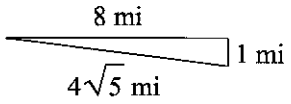


Section 5: Radical Expressions and Equations
Simplify.

33) $-6\sqrt{288x}$

34) $3\sqrt{320a^3}$

35) $-\sqrt{12}-2\sqrt{27}$

36) $3\sqrt{54}+3\sqrt{6}$

37) $-2\sqrt{2}(2+\sqrt{2})$

38) $4\sqrt{2}(-4\sqrt{10}+4\sqrt{6})$

39) $(3\sqrt{3}+\sqrt{2})(\sqrt{3}+\sqrt{2})$

40) $(\sqrt{5}+5)(-2\sqrt{5}+3)$

41) $\dfrac{5\sqrt{5}}{3\sqrt{2}}$

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

Solve each equation. Remember to check for extraneous solutions.

43) $\sqrt{6v-2}=4$

44) $\sqrt{12-2x}=\sqrt{x+3}$

Section 6: Quadratic Expressions and Equations
Factor each completely.

45) $2k^2+6k$

46) $x^2+12x+32$

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

47) $r^2 + 4 = -4r$

48) $p^2 + 1 = 2p$

Solve each equation by taking square roots.

49) $8 + 9n^2 = 12$

50) $-7 + 49p^2 = -3$

Solve each equation by completing the square.

51) $r^2 - 16r - 17 = 0$

52) $x^2 + 2x - 2 = 0$

Solve each equation with the quadratic formula.

53) $-b^2 + 10b + 75 = 0$

54) $5n^2 + 12n - 10 = 0$

Answers to Summer Assignment - Part 2

1) $\{-2\}$

2) $\{-6\}$

3) $a = -\dfrac{k}{-w - v}$

4) $a = \dfrac{b}{zm - 1}$

5) Undefined

6) -2

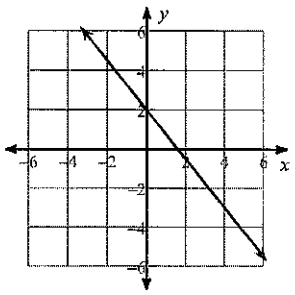
7) -2

8) $\dfrac{3}{4}$

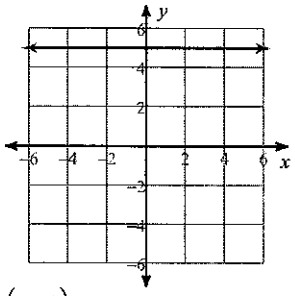
9) $-\dfrac{4}{3}$

10) -4

11)



12)



13) $(6, 4)$

14) Infinite number of solutions

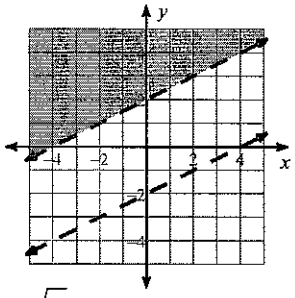
15) $(7, 1)$

16) $(-7, -5)$

17) $(4, 4)$

18) No solution

19)



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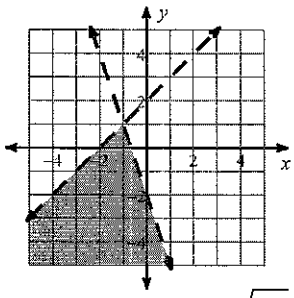

21) $2\sqrt{10}$

22) $3\sqrt{5}$

23) $\sqrt{158}$ in

24) $\sqrt{65}$ ft

25) $2\sqrt{22}$ yd

26) $3\sqrt{15}$ km

27) Yes

28) No

29) Acute

30) Right

31) Acute

32) Obtuse

33) $-72\sqrt{2x}$

34) $24a\sqrt{5a}$

35) $-8\sqrt{3}$

36) $12\sqrt{6}$

37) $-4\sqrt{2} - 4$

38) $-32\sqrt{5} + 32\sqrt{3}$

39) $11 + 4\sqrt{6}$

40) $5 - 7\sqrt{5}$

41) $\dfrac{5\sqrt{10}}{6}$

42) $\dfrac{9\sqrt{5} - 3\sqrt{2}}{43}$

43) $\{3\}$

44) $\{3\}$

45) $2k(k + 3)$

46) $(x + 4)(x + 8)$

47) $\{-2\}$

48) $\{1\}$

49) $\left\{\dfrac{2}{3}, -\dfrac{2}{3}\right\}$

50) $\left\{\dfrac{2}{7}, -\dfrac{2}{7}\right\}$

51) $\{17, -1\}$

52) $\{-1 + \sqrt{3}, -1 - \sqrt{3}\}$

53) $\{-5, 15\}$

54) $\left\{\dfrac{-6 + \sqrt{86}}{5}, \dfrac{-6 - \sqrt{86}}{5}\right\}$