

Summer Assignment - Part 1

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 strengths and weaknesses.

Step 4

Complete Summer Assignment - Part 2 for each identified weakness on the Analysis Form.

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.

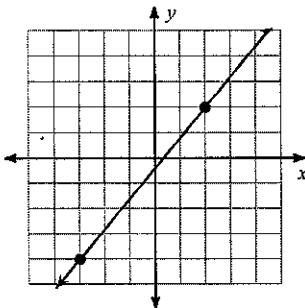
3) $z = mx - y$, for x

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

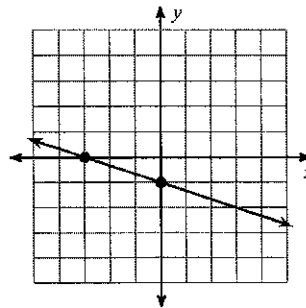
Section 2: Linear Equations

Find the slope of each line.

5)



6)



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

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

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

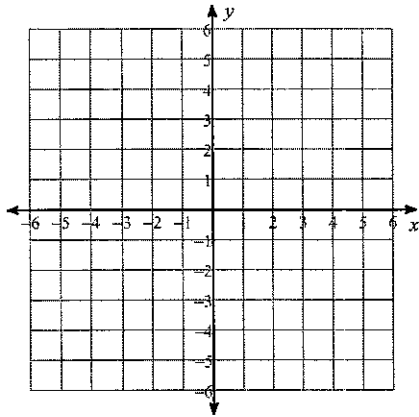
Find the slope of each line.

9) $y = 5$

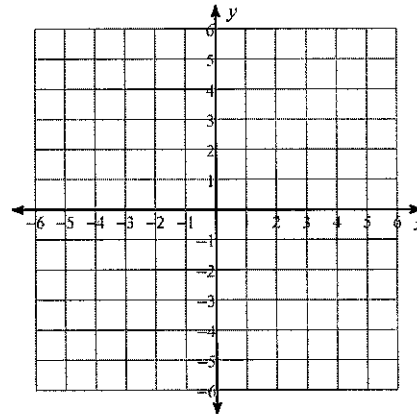
10) $y = -2x - 5$

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

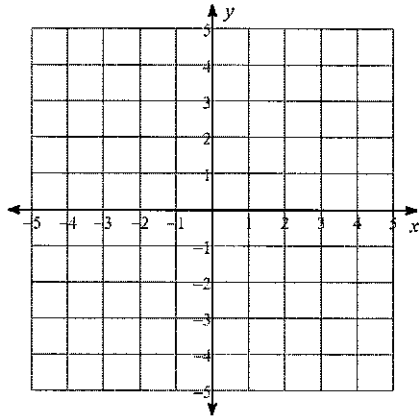
Solve each system by elimination.

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

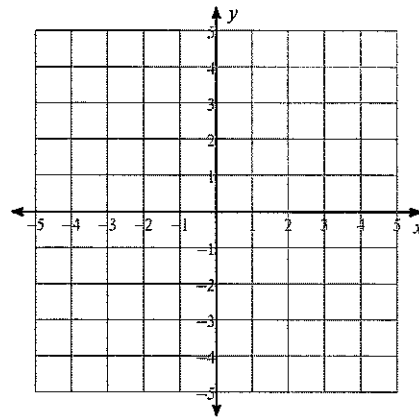
16) $-27 + 6y = -7x$
 $6 - 24y + 6x = 0$

Solve each system by graphing.

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

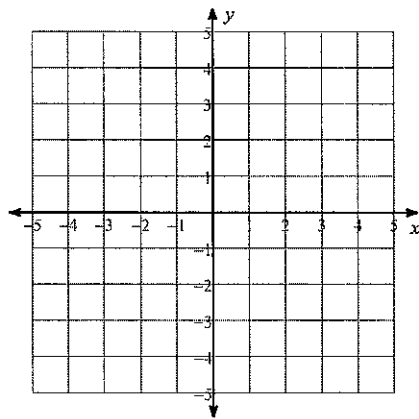


18) $y = 4x - 3$
 $-2x = y - 3$

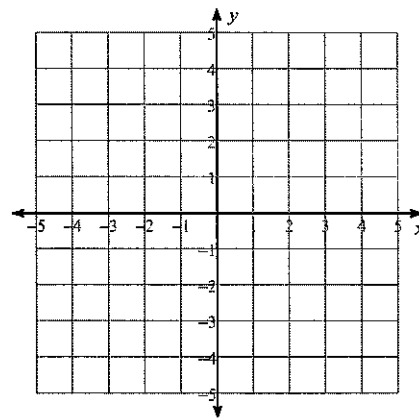


Sketch the solution to each system of inequalities.

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



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



Section 4: Distance Formula and Pythagorean Theorem

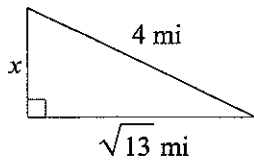
Find the distance between each pair of points.

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

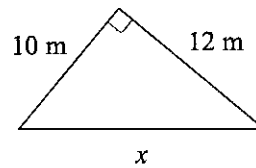
22) $(-3, 6), (5, 6)$

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

23)

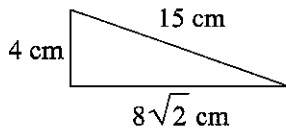


24)

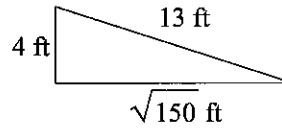


State if each triangle is a right triangle.

25)

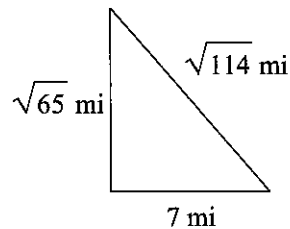


26)

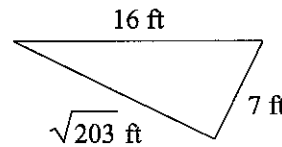


State if each triangle is acute, obtuse, or right.

27)



28)



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

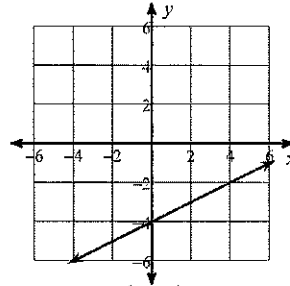
7) $-\frac{17}{6}$

8) 0

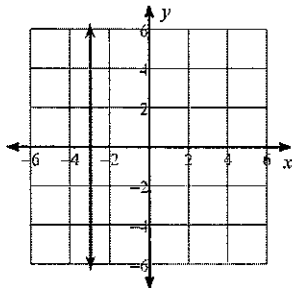
9) 0

10) -2

11)



12)



13) $(1, -4)$

14) $(3, 0)$

15) Infinite number of solutions

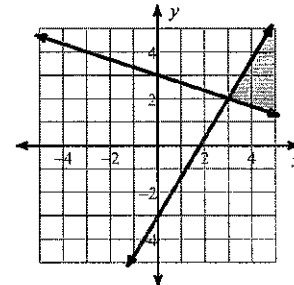
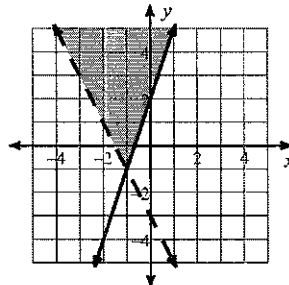
16) $(3, 1)$

17) $(2, 4)$

18) $(1, 1)$

19)

20)



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:		
<ul style="list-style-type: none"> • 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:		
<ul style="list-style-type: none"> • 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:		
<ul style="list-style-type: none"> • 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:			
<ul style="list-style-type: none"> • 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:			
<ul style="list-style-type: none"> • 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:			
<ul style="list-style-type: none"> • 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...

Summer Assignment - Part 2

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.

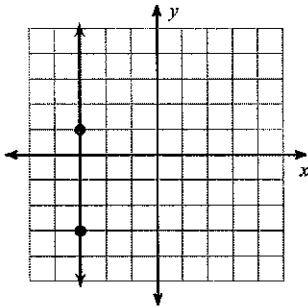
3) $\frac{k}{a} = w + v$, for a

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

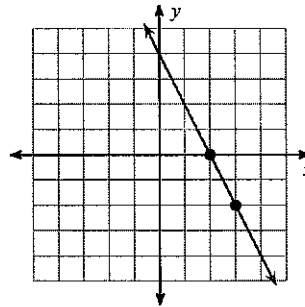
Section 2: Linear Equations

Find the slope of each line.

5)



6)



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

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

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

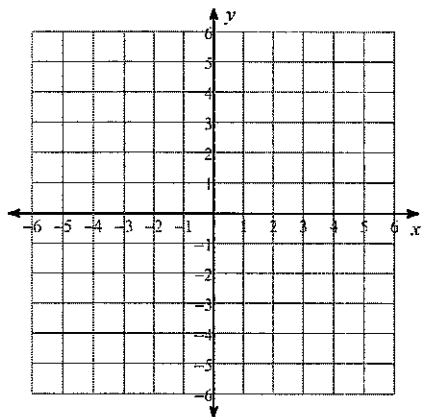
Find the slope of each line.

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

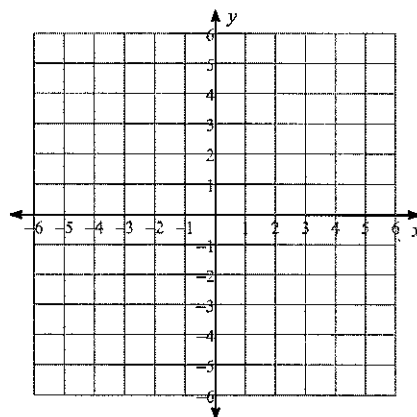
10) $y = -4x + 1$

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

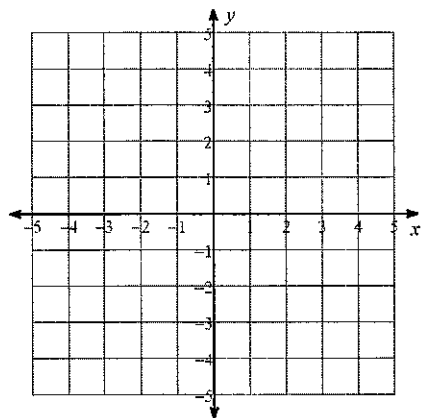
Solve each system by elimination.

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

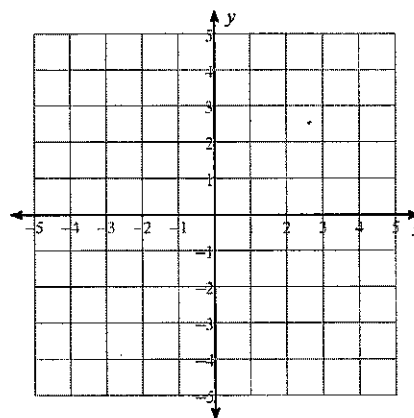
16) $8y - 2 = 6x$
 $0 = -10x + 20 + 18y$

Solve each system by graphing.

$$17) \begin{aligned} -8 + 4y - 2x &= 0 \\ -12 &= 4y - 7x \end{aligned}$$

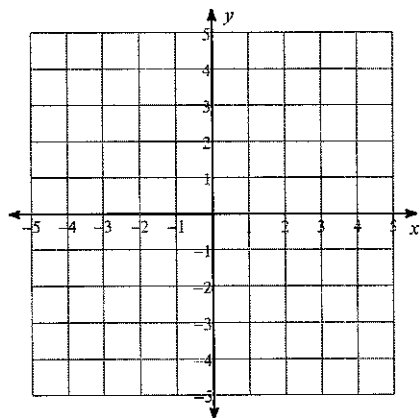


$$18) \begin{aligned} 0 &= -5x - 4 + 2y \\ 1 + \frac{5}{6}x - \frac{1}{3}y &= 0 \end{aligned}$$

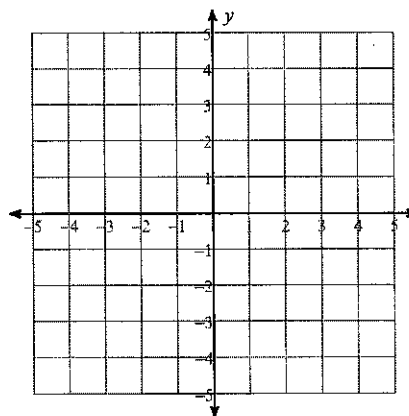


Sketch the solution to each system of inequalities.

$$19) \begin{aligned} y &> \frac{1}{2}x + 2 \\ y &> \frac{1}{2}x - 2 \end{aligned}$$



$$20) \begin{aligned} 3x + y &< -2 \\ x - y &> -2 \end{aligned}$$



Section 4: Distance Formula and Pythagorean Theorem

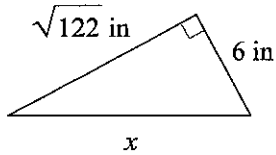
Find the distance between each pair of points.

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

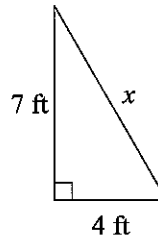
22) $(2, -3), (-4, 0)$

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

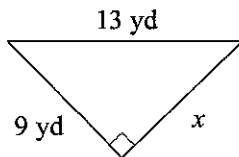
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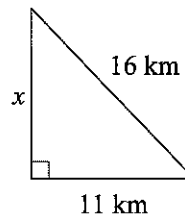
24)



25)

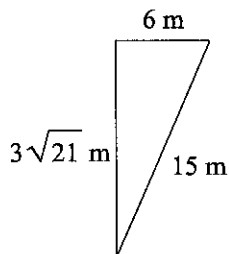


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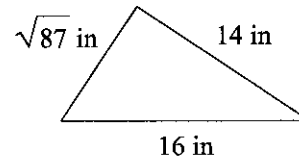


State if each triangle is a right triangle.

27)

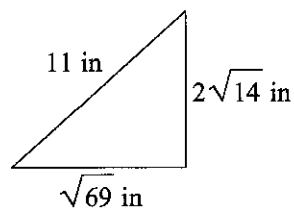


28)

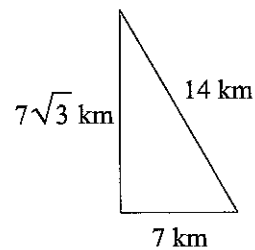


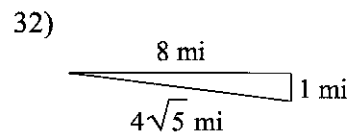
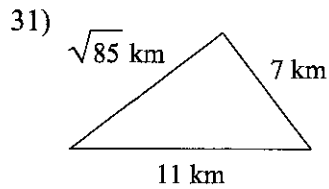
State if each triangle is acute, obtuse, or right.

29)



30)





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

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

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) $a = -\frac{k}{-w-v}$

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

5) Undefined

6) -2

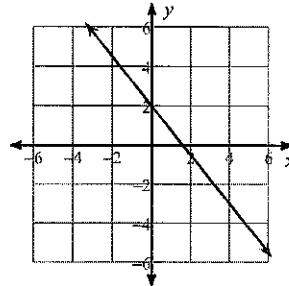
7) -2

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

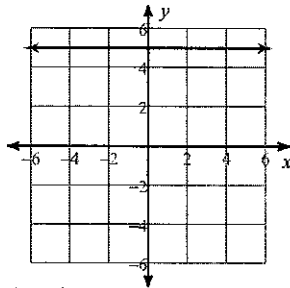
9) $-\frac{4}{3}$

10) -4

11)



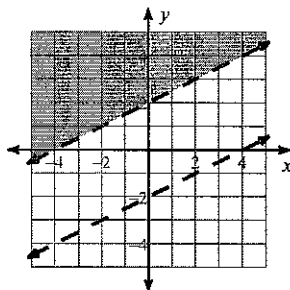
12)



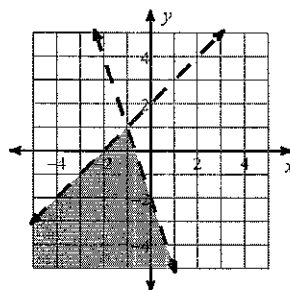
13) $(6, 4)$

14) Infinite number of solutions

15) $(7, 1)$
19)



16) $(-7, -5)$
20)



17) $(4, 4)$

18) No solution
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) $\frac{5\sqrt{10}}{6}$

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

43) $\{3\}$

44) $\{3\}$

45) $2k(k+3)$

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

47) $\{-2\}$

48) $\{1\}$

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

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

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

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

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

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