SUMMER REVIEW FOR STUDENTS **COMPLETING** GEOMETRY – show your work.
WEEK 1

Name:

1. Given: $2x^2 - 3x = 8$

a. Write in standard form. $ax^2+bx+c=0$

b. Solve for x using the Quadratic Formula:

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

2. Write an equation for a line parallel to $y = -3x + 2$ that passes through the point $(-1, 4)$.

3. Simplify using exponent rules:

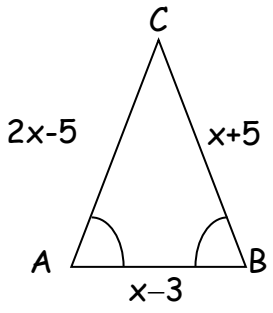
$$(7x^4)(3x)^3$$

4. Graph both lines on the same axes. From the graph, determine if the number of solutions to the system is none, one, or infinite.

$$3x + y = 6$$
$$2y - x = -9$$

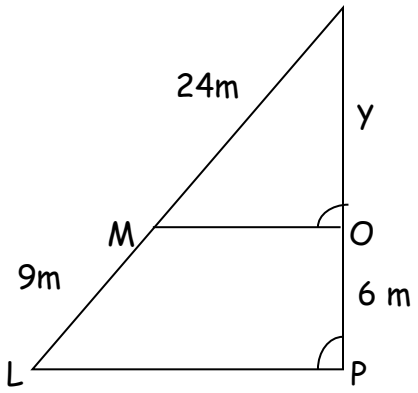
5. Suppose Rima ran a 25-mile race 3 minutes faster than Zena. Zena ran the race in 254 minutes. How long did it take Rima to run the race?

6. Find the length of each side of $\triangle ABC$.



SUMMER REVIEW FOR STUDENTS COMPLETING GEOMETRY
WEEK 2

1. Solve for y:



2. Write the equation of the circle with center (3,-4) that passes through the point (7, -4).

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

4. The table shows the number of students each year at your high school.

Year	1990	1992	1994	1996
Students	1000	1125	1275	1350

Graph the data and write the equation of the line of best fit.

5. Given the following set of data:
   $(0, -2), (1, 1), (2, 4), (3, 7)$
   a) State the domain and range.
   b) Is the relation a function? Explain your reasoning.

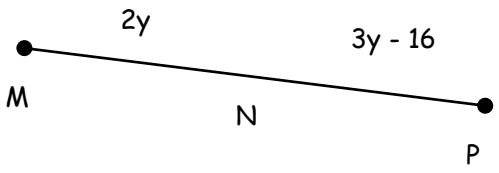
6. Find the distance between the points (3, 6) and (-5, -4). Use the distance formula.

$$d = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$$

SUMMER REVIEW FOR STUDENTS COMPLETING GEOMETRY
WEEK 3

1. Use the FOIL pattern to multiply:
$(3x - 1)(x + 2)$

2. In the figure below, point N is between points M and P and MP=104. Find NP.

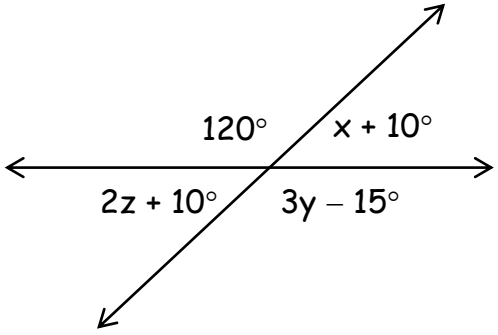


3. Solve the inequality:
$3 < -2x - 1$

4. Set up the equation for the following situation and solve.
Adam has three times as much money as Betty. Together they have $34. How much money does each person have?

5. For 5 consecutive months, Jason lost the same amount of weight each month. Five months ago, he weighed 165 pounds. After five months, he weighed 145 pounds. How many pounds did Jason lose each month?

6. Given the following picture, solve for x, y, and z.



SUMMER REVIEW FOR STUDENTS COMPLETING GEOMETRY
WEEK 4

1. A line goes through the point $(-8, -2)$ and is also perpendicular to the line $y = 4x - 6$. Find the equation of the line.

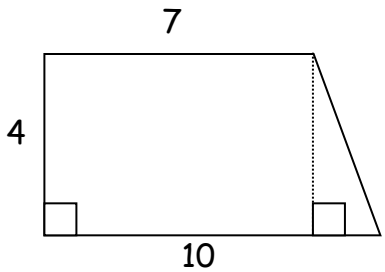
2. Find the x- and y-intercepts for the linear equation $3x + y = 6$.

3. Find the slope of the line which passes through the points $(-3, 7)$ and $(3, -5)$.

4. Evaluate $f(-3)$.
$f(x) = x^2 - 8x + 12$

5. Dilate this smiley plane figure by a scale factor of 2.

6. Find the perimeter of the polygon. (Figure is not drawn to scale.)



SUMMER REVIEW FOR STUDENTS COMPLETING GEOMETRY
WEEK 5

1. Simplify the expression by factoring:

$$x^2 - 2x - 3$$

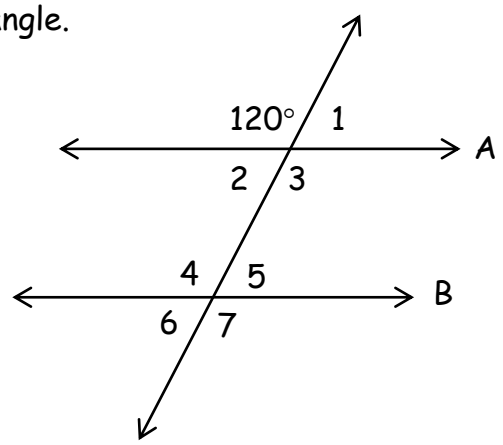
2. Solve for x:

$$\frac{1}{2}(8 + 6x) = -10 + x$$

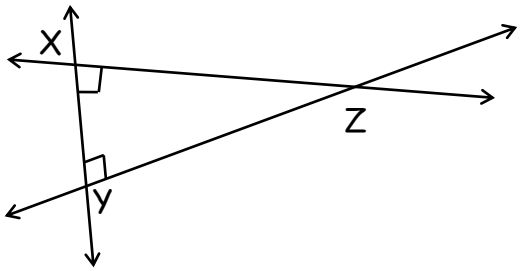
3. Solve for a: $2ax + 3 = b$

4. A plumber charges $80 for parts and $65 per hour for labor. If the total charge was $161.25, how long did the plumber work?

5. Given A || B, find the measure of each angle.



6. Explain why ΔXYZ as it is shown cannot exist.



SUMMER REVIEW FOR STUDENTS COMPLETING GEOMETRY
WEEK 6

1. Factor completely: $5x^2 - 125$

2. Graph the quadratic equation $y = x^2 - 2x - 3$. Label the vertex, y-intercept, and x-intercepts. (Find the vertex and points on both sides of the vertex.)

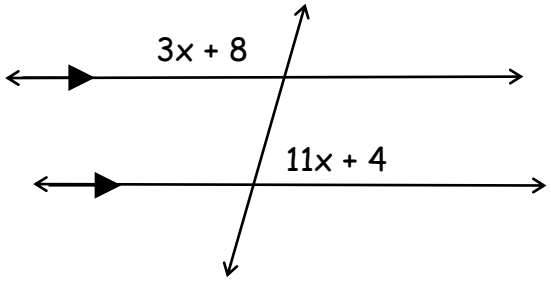
3. Find the slope of the line.
$3x + 2y = -2$

4. How much wrapping paper would you need to wrap a cube? The edge of the cube measures 3 inches. The formula for finding the surface area of a cube is $SA = 6s^2$ where s represents the length of a side.

5. Ski Tours offers a one-day package deal that charges \$75 for the first person and \$55 for each additional person in a group. A person tries to get a group of friends together who will split the entire cost evenly. Complete the table below.

Persons	Group Cost	Individual Cost
1		
2		
3		
4		
5		

6. Find the value of x.



SUMMER REVIEW FOR STUDENTS COMPLETING GEOMETRY
WEEK 7

1. Which of the following represents the solution set of the given equation?

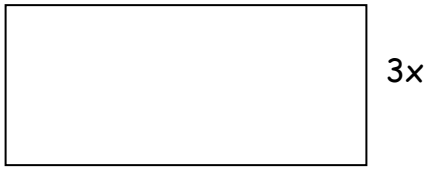
   $x^2 - 11 = 14$

   a) $x = 7, 2$
   b) $x = 5, -5$
   c) $x = 5$
   d) $x = 5, 6$

2. Two lines have the equations given below. Are they parallel, perpendicular, or neither?

   $Y = -3x + 8$
   $6x + 2y = 1$

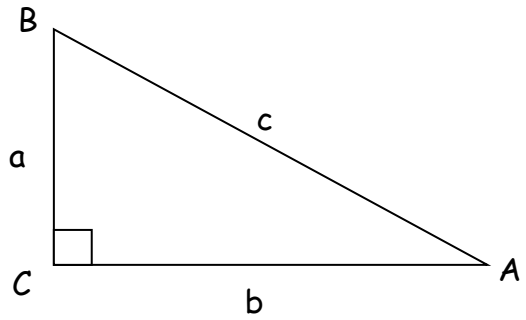
3. Write the simplest expression for the area and perimeter of the rectangle.



4. Describe the following lines as parallel, perpendicular, or neither by comparing their slopes.
   slope AB = $\frac{1}{2}$
   slope of CD = 2
   slope of EF = $\frac{1}{2}$
   slope of GH = -2

   a) AB and GH
   b) AB and CD
   c) CD and GH
   d) AB and EF

5. SOHCAHTOA is often used to remember the trigonometric ratios. Describe each ratio (sine, cosine, tangent) for angle A in terms of a, b, and c.



6. The surface area of a sphere is computed by the formula $S = 4\pi r^2$. What is the radius of a sphere with a surface area of 100π?

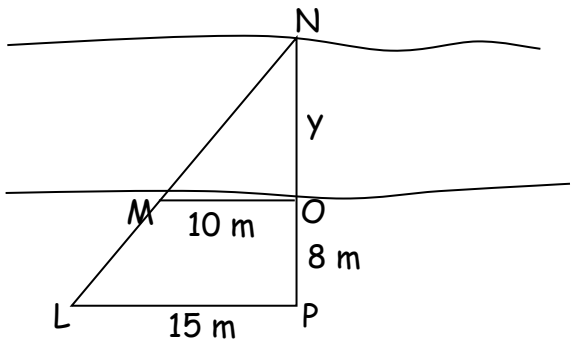
SUMMER REVIEW FOR STUDENTS COMPLETING GEOMETRY
WEEK 8

1. Sketch the graph of $y = x^2 - 2x - 8$. Find the vertex, x-intercepts, and y-intercept.

2. Simplify: $\dfrac{35x^2y + 20xy^2 + 10xy}{5xy}$

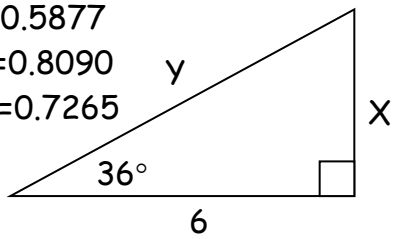
3. A page in a school yearbook is $8\frac{1}{2}$ inches by 11 inches. The left margin is 1 inch and the right margin is $2\frac{1}{2}$ inches. The space between the pictures is $\frac{1}{4}$ inch. How wide should each picture be to fit three across the page?

4. A surveyor has set up the following diagram to determine the distance across the river, y. What is the distance?



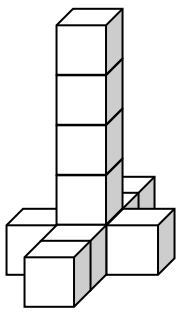
5. Use a calculator to find the values (to 3 decimal places) of X and Y.

sin 36°=0.5877
cos 36°=0.8090
Tan 36°=0.7265



6. Find the volume of the figure below, if one edge of a cube is 2 cm.

a) 80 cm^3
b) 22 cm^3
c) 88 cm^3
d) 20 cm^3



SUMMER REVIEW FOR STUDENTS COMPLETING GEOMETRY
WEEK 9

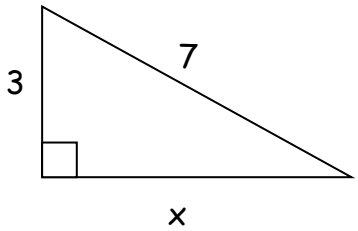
1. Wile E. Coyote is standing on a springboard atop a high cliff. Roadrunner drops a boulder on the other end of the springboard, sending Wile up with an initial velocity of 4 ft/sec. At what time will he land in the river, 120 feet below the cliff? ($h = -16t^2 + v_o t + s$ where v_o is the initial velocity, s is the initial height, and t is time.)

2. Graph the linear equation $3x - 2y = 10$.

3. Bob bought 3 apples and 2 tomatoes for $3.00 at the fruit stand. Maria bought 5 apples and 1 tomato at the same stand for $3.25. How much did each apple and each tomato cost?

4. Solve and graph the solution on a numberline: $-2x + 1 < 7$

5. Solve for x. (Use the Pythagorean Theorem.)



6. The volume of a cube is 343 cm^3. Find the volume of a second cube if the length of its edge is half of the length of the first cube's edge.

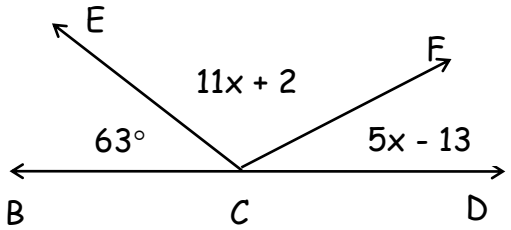
SUMMER REVIEW FOR STUDENTS COMPLETING GEOMETRY
WEEK 10

1. Factor completely: $2x^2 + 4x - 30$

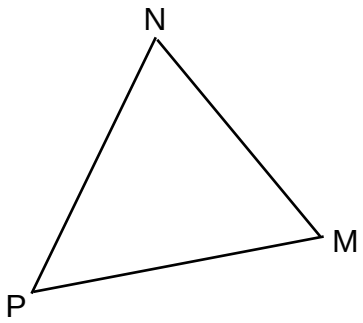
2. Jenny has \$100 for her clothing allowance to buy jeans and shirts. If shirts cost \$25 and jeans cost \$30, write an inequality that models how many of each she can buy.

3. Find the slope and the y-intercept of the line: $2y - 4 = 8x$.

4. If $\angle BCE$ and $\angle ECD$ are supplementary, find x and $m\angle ECF$.



5. Given ΔMNP where $m\angle M = 3x$, $m\angle N = 4x$, and $m\angle P = 5x$,
   a) Set up an algebraic equation and solve for x.
   b) Find the measures of the three angles.

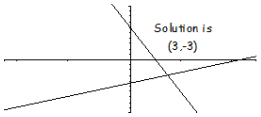


6. A phone company charges \$0.09 per minute for any long distance call, along with a \$5 monthly fee. You monthly bill shows that you owe \$27.23. For how many minutes of long distance calls were you charged?

SUMMER REVIEW FOR STUDENTS COMPLETING GEOMETRY
ANSWER KEY

WEEK 1 - ANSWERS

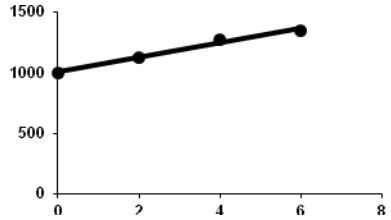
1. a) $2x^2 - 3x - 8$; b) $x \approx 2.886, -1.386$
2. $y = -3x + 1$
3. $189x^7$
4. One solution.



5. Rima ran in 251 minutes.
6. $x = 10$, $AC = 15$, $BC = 15$, $AB = 7$

WEEK 2 - ANSWERS

1. $y = 16$
2. $(x-3)^2 + (y+4)^2 = 16$
3. $3x^2 + 2x - 8$
4. $y = 60x + 1007.5$



5. a) D = {0, 1, 2, 3} R = {-2, 1, 4, 7}
   b) This is a function because for every x-value, there is only one y-value.
6. Distance = $\sqrt{164} \approx 12.81$

WEEK 3 – ANSWERS

1. $3x^2 + 5x - 2$
2. $y = 24$, NP=56
3. $x < -2$
4. Betty has $8.50 and Adam has $25.50.
5. 4 pounds per month
6. $x = 50$, $y = 45$, $z = 25$

WEEK 4 - ANSWERS

1. $y = (-1/4)x - 4$
2. x-intercept = (2, 0); y intercept = (0, 6)
3. slope = -2
4. $f(-3) = 45$
5. Each dimension of the smiley image is twice as big as the pre-image: Diameter is doubled, for instance.
6. 26

WEEK 5 - ANSWERS

1. $(x + 1)(x - 3)$
2. $x = -7$
3. $a = \dfrac{b - 3}{2x}$
4. 1.25 hours or 1 hour 15 min.
5. 1 = 60° 2 = 60° 3 = 120°
   4 = 120° 5 = 60° 6 = 60°
   7 = 120°
6. If Angle X and Angle Y are right, then the lines XZ and YZ are parallel and therefore, will not intersect. OR, 90+90=180,so the third angle can't exist.

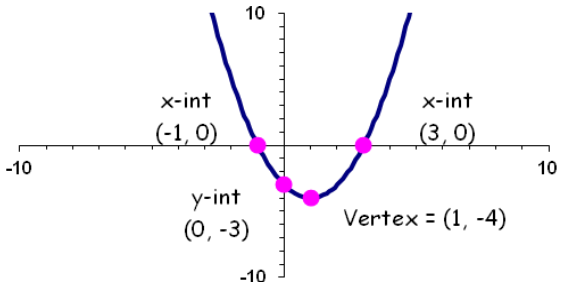
WEEK 6 - ANSWERS

1. $5(x + 5)(x - 5)$ (#2 on next page)
3. m=-3/2
4. 54 square inches
5.

Persons	Group Cost	Individual Cost
1	$75	$75.00
2	$130	$65.00
3	$185	$61.67
4	$240	$60.00
5	$295	$59.00

6. $x = 12$

2.

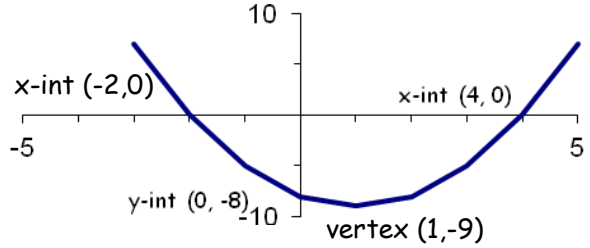


WEEK 7 - ANSWERS

1. b
2. parallel
3. Perimeter = $26x - 2$
   Area = $30x^2 - 3x$
4. AB and GH are perpendicular.
   AB and CD are neither.
   CD and GH are neither.
   AB and EF are parallel.
5. $\sin A = \frac{a}{c}$ $\cos A = \frac{b}{c}$ $\tan A = \frac{a}{b}$
6. r = 5

WEEK 8 – ANSWERS

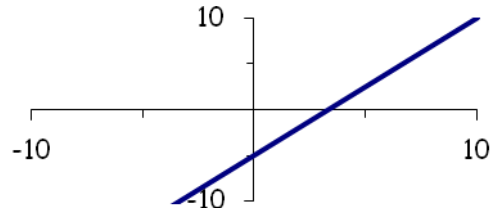
1.



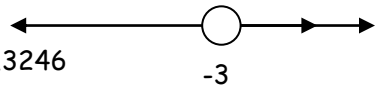
2. $7x + 4y + 2$
3. x = 1.5 inches
4. y = 16 meters
5. x = 4.359, y = 7.417
6. c

WEEK 9 – ANSWERS

1. 2.87 seconds
2.



3. Apples cost $0.50 and Tomatoes cost $0.75.
4. $x > -3$



5. $x = \sqrt{40} \approx 6.3246$
6. 42.875 cm^3

WEEK 10 – ANSWERS

1. $2(x + 5)(x - 3)$
2. $25x + 30y = 100$ where x is the number of shirts she can buy and y is the number of jeans she can buy
3. slope = 4 and y-intercept = 2
4. x = 8, $m\angle ECF = 90°$
5. x=15;$m\angle M = 45°$ $m\angle N = 60°$$m\angle P = 75°$
6. 247 min.