



Albert Einstein High School

Summer Task Cover Sheet



10

NAME: _____

Geo. & Honors Geo. Summer Packet

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Course:

✓ **Purpose of the Summer Assignment:**

Our hope is that this review will keep your mind mathematically active during the summer months, and help you identify your strengths and weaknesses prior to coming into Geometry.

✓ **Relationship between Summer Task and 1st Quarter Objectives:**

Many of these tasks will either be reviewed or expanded upon during 1st quarter.

✓ **Description of the Task:**

This summer assignment serves as a review of math skills necessary for success in Geometry.

✓ **Supportive Resources:**

Go to <http://www.montgomeryschoolsmd.org/> for review materials and formula sheets.

www.khanacademy.org has useful videos and material for review

Grading:

✓ **DUE DATE:** First day of school (Tuesday, September 4th, 2018).

✓ **DEADLINE:** Friday, September 7th, 2018

✓ **Grading Category:** This will be left to teacher discretion.

✓ **Points:** 10 points

✓ **Extent to which the summer task counts towards the marking period grade:**

This will be left to teacher discretion and directly depends on the number of points earned throughout the quarter within the corresponding category.

✓ **Grading Criteria and Rubric:** Some problems will be checked for completion, while others are checked for accuracy. This will be left to teacher discretion.



Albert Einstein High School

Summer Task



HELPFUL FORMULAS

- Slope of a line, given two points, A (x_1, y_1) and B (x_2, y_2) : $m = \frac{y_2 - y_1}{x_2 - x_1}$

Note: Parallel lines have the same slope.

Perpendicular lines have slopes that are negative reciprocals.

- Distance between two given points, A (x_1, y_1) and B (x_2, y_2) : $d = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$

- Equation of a line (written in slope-intercept form): $y = mx + b$

- Equation of a line (written in point-slope form), given slope and a point A (x_1, y_1) : $y - y_1 = m(x - x_1)$

- Circumference of a circle: $C = 2\pi r$

- Area of a circle: $A = \pi r^2$

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



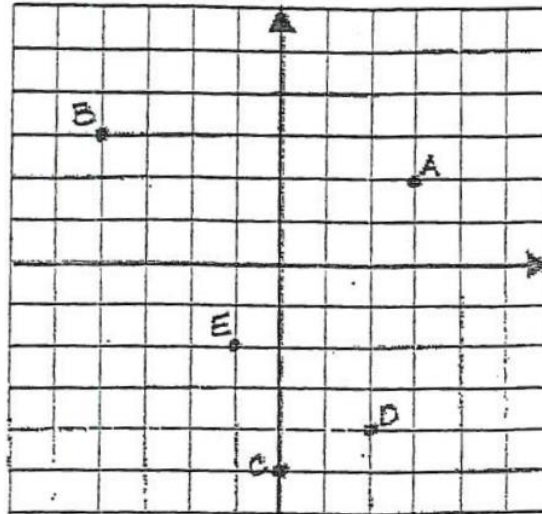
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Summer Task



DIRECTIONS: Be sure to show work whenever possible for each problem.

1) Use the graph to complete parts a, b, and c shown below.



a) Give the coordinates of each lettered point, each block is 1 unit.

(5 pts)

Point A: (____ , ____)

Point D: (____ , ____)

Point B: (____ , ____)

Point E: (____ , ____)

Point C: (____ , ____)

b) Tell which quadrant (I, II, III, IV) of the coordinate plane each point is in.

(5 pts)

Point A is in quadrant ____.

Point D is in quadrant ____.

Point B is in quadrant ____.

Point E is in quadrant ____.

Point C is in quadrant ____.

c) Use the coordinate grid above to plot points F(3, 2) and G(-5,-2). Then use the distance formula (back of first page) to find the distance between these two points.

(2 pts)



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Summer Task



DIRECTIONS: Be sure to show work whenever possible for each problem.

2) Determine the slope of the line that passes through each pair of points.

(8 pts)

a) $(5, 1)$ and $(2, 7)$

b) $(5, 3)$ and $(-2, 3)$

c) $(-\frac{1}{2}, -2)$ and $(-\frac{3}{2}, 1)$

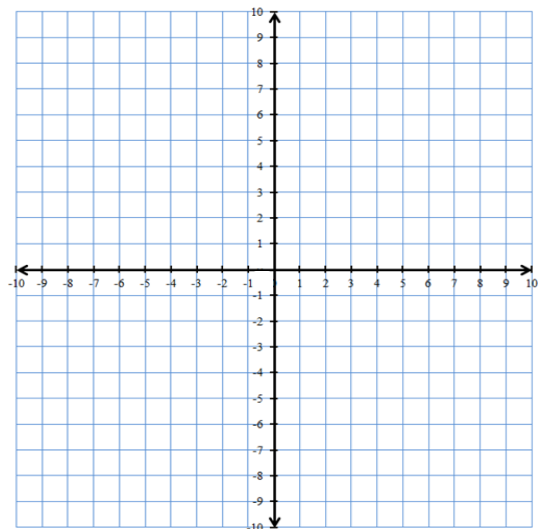
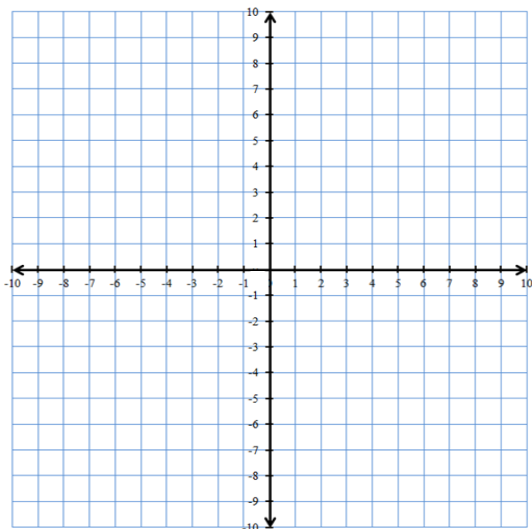
d) $(2, -4)$ and $(2, 6)$

3) Construct a line that is parallel to the line formed by each pair of points listed below.

(4 pts)

a) $(0, -2)$ and $(3, -4)$

b) $(-1, 1)$ and $(3, 9)$





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Summer Task



DIRECTIONS: Be sure to show work whenever possible for each problem.

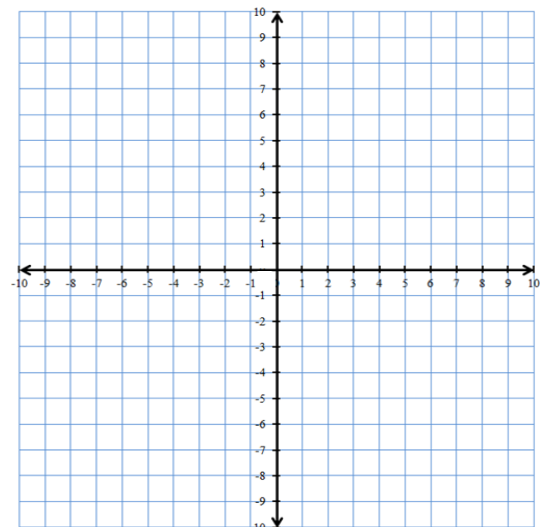
4) Determine the equation for each line described below in slope-intercept form ($y = mx + b$). **(8 pts)**

a) slope = 5, and contains the point (3, 2)

b) Goes through the points (0, 2) and (2, 0)

c) Is parallel to the line $y = -2x + 3$, contains the points (-2, -1)

d) Is perpendicular to the line $y = 3x - 1$, contains the points (-3, 0)





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Summer Task



DIRECTIONS: Be sure to show work whenever possible for each problem.

5) Simplify each of the expressions shown below.

(6 pts)

a) $\sqrt{81}$

b) x^3x^5

c) $\frac{4x^5y^2}{2x^3y}$

d) $(5x^3y^2)^2$

e) $(x^2 - 3x + 4) + (3x - 12)$

f) $(3x^3 - x^2 - 3x + 4) - (x^2 + 12)$

6) Use distribution to multiply the expressions shown below.

(4 pts)

a) $(x - 3)(x + 5)$

b) $5x(3x - 5)$



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Summer Task



DIRECTIONS: Be sure to show work whenever possible for each problem.

7) Solve each equation for x:

(16 pts)

a) $5x + 3 = -12$

b) $(6x - 8) - (5x + 9) = 3$

c) $7x - 8x + 4 = 5x - 2$

d) $3(x - 2) = 18$

e) $(3x + 2) - 2(x + 4) = 7$

f) $\frac{x+2}{3} = \frac{8}{15}$

g) $\frac{18}{x} = 6$

h) $\frac{5}{7} = \frac{10}{x+2}$



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Summer Task



DIRECTIONS: Be sure to show work whenever possible for each problem.

8) Solve each equation below for the unknown values of x .

(6 pts)

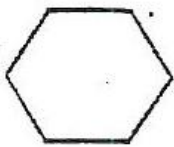
a) $x^2 + 3x = 0$

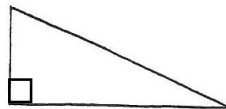
b) $x^2 - 5x - 24 = 0$

c) $3x^2 + x - 4 = 0$

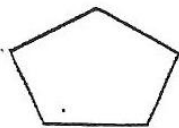
9) Identify each figure by name.

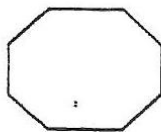
(6 pts)

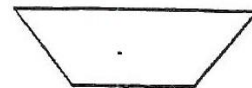














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DIRECTIONS: Be sure to show work whenever possible for each problem.

10) Determine the area and perimeter (or circumference) of each figure described below. **(10 pts)**

a) Rectangle (3.6 x 4.2 cm)

b) Square with 9 m sides

c) Circle with radius of 4 inches.

d) Circle with diameter of 9 inches.

e) Circumference of a circle with area = 36π cm².



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Summer Task



ANSWER KEY

1-Part A:

A(3, 2)

B(-4, 3)

C(0,-5)

D(2,-4)

E(-1,-2)

1-Part B:

A-1

B-2

C-3/4

D-4

E-3

6-Part A:

$$x^2 + 2x - 15$$

6-Part B:

$$15x^2 - 25x$$

7-Parts A-H:

A: -3

B: 20

C: 1

D: 8

E: 13

F: -0.4

G: 3

H: 12

9: Hexagon, Right Triangle, Parallelogram, Pentagon, Octagon, Trapezoid

10-Part A:

Area = 15.12 cm²

Perimeter = 15.6 cm

10-Part B:

Area = 81 cm²

Perimeter = 36 cm