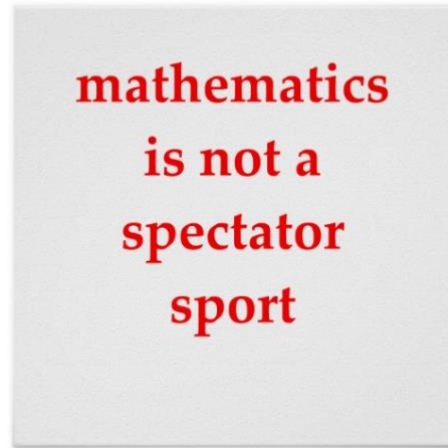


Richard Montgomery High School

Honors Geometry Summer Review Packet



Before you get started here is some important information:

The problems in this packet are designed to help you review pre-requisite skills that are important to your success in Honors Geometry. We expect that in addition to work shown for each problem, your work demonstrates a true attempt towards understanding.

To support this, you will find a QR Code and bitly at the beginning of each section that will link to a video to review the problems in that section. We encourage you to view these as you prepare for the upcoming school year.

Your success on the problems will not depend on having access to a calculator.

You will be given an opportunity to review, ask questions, and clarify misunderstandings when we the school year begins. Please note that we will spend time in class working towards mastery of these objectives before you are assessed.

We look forward to working with you soon! ☺

Your Full Name: _____

What objectives will we be reviewing?

Part 1: Linear Equation

- I will be able to determine slope given two points.
- I will be able to use slope to analyze relationships between lines.
- I will be able to write the equation of a line given two points, a point and a slope, or the graph of a line.
- I will be able to analyze and work with a linear equation in a variety of forms.
- Given an equation, I will be able to successfully graph a line.

Part 2: Solving Equations

- I will be able to use inverse operations to solve multi-step equations for a missing value.
- I will use knowledge of factoring to solve quadratic equations.
- I will use knowledge of the quadratic formula to solve quadratic equations
- Using substitution, I will verify that my solutions are correct.

Part 3: 2D Shapes

- I will successfully find the area of 2-dimensional shapes such as a circle, triangle, square, rectangle, and trapezoid.
- I will successfully find the perimeter of 2-dimensional shapes such as a circle, triangle, square rectangle, and trapezoid.
- Given the area of a 2-dimensional shape, I will apply knowledge of solving equations to find a missing dimension.

Part 4: Right Triangles

- Given two sides of a right triangle, I will be able to solve for the missing side by using the Pythagorean theorem.
- I will use the Pythagorean Theorem to classify a triangle by its angle measurements.
- I will use the Pythagorean Theorem to find the distance between two coordinate points.

Honors Geometry Formulas

These are formulas you should be familiar with

Equations of Lines:

Slope-Intercept Form: $y = mx + b$

Point- Slope Form: $y - y_1 = m(x - x_1)$

Standard Form: $Ax + By = C$

Coordinate Geometry:

Slope: $\frac{y_2 - y_1}{x_2 - x_1}$

Midpoint: $(\frac{x_1 + x_2}{2}, \frac{y_1 + y_2}{2})$

Distance: $\sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$

Area/Circumference:

Triangle: $A = \frac{1}{2}bh$

Rectangle: $A = bh$

Trapezoid: $A = \frac{1}{2}(b_1 + b_2)h$

Circle Area: $A = \pi r^2$

Circle Circumference: $C = 2\pi r = \pi d$

Part 1: Linear Equation

<http://bitly.ws/8CH9>



- I will be able to determine slope given two points.
- I will be able to use slope to analyze relationships between lines.
- I will be able to write the equation of a line given two points, a point and a slope, or the graph of a line.
- I will be able to analyze and work with a linear equation in a variety of forms.
- Given an equation, I will be able to successfully graph a line.

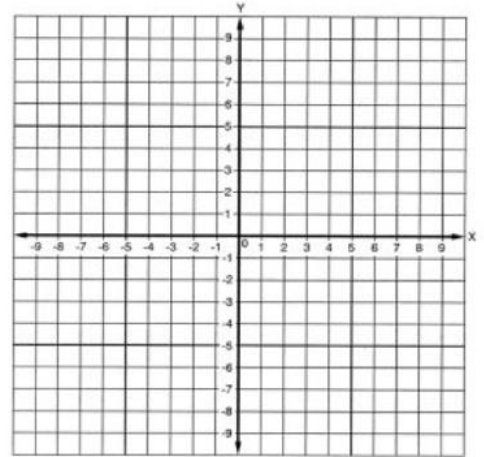
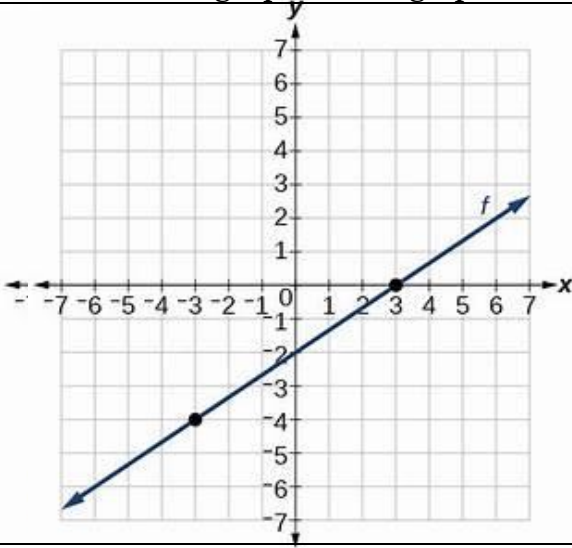
1. Given each pair of points, calculate the following:

Given Points	Determine the Slope	Identify the Parallel Slope	Identify the Perpendicular Slope
a. (5,1) and (2,7)			
b. (5,3) and (-2,3)			
c. (2,4) and (2,6)			

2. Determine the equation of each in slope intercept form and point slope form:

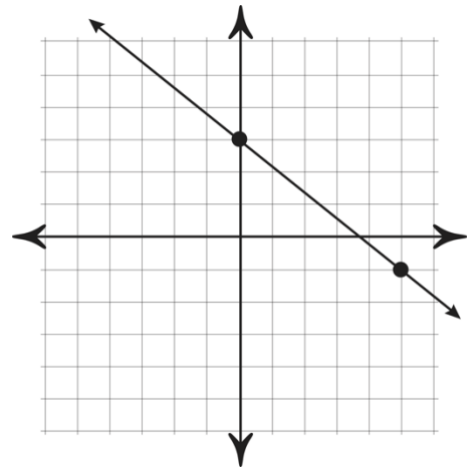
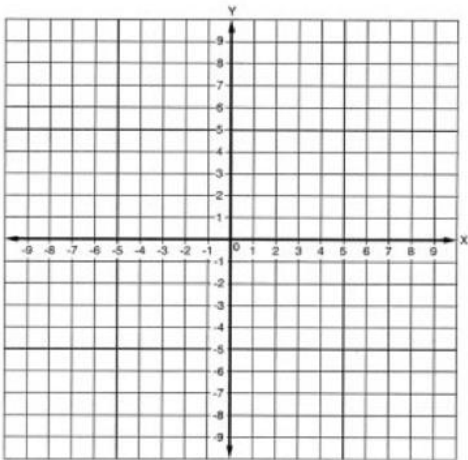
a. $m = 5$; point: (3,2) Point Slope: _____ Slope Intercept: _____	b. Points: (0,2) and (2,0) Point Slope: _____ Slope Intercept: _____	c. A line through the point (-2,1) and parallel to the line $y = -2x + 3$ Point Slope: _____ Slope Intercept: _____
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3. Find the missing equation or graph:



$$y - 3 = \frac{1}{2}(x + 1)$$

Equation: _____



Equation: $y = \frac{2}{3}x - 4$

Equation: _____

4. Determine if the following lines are parallel, perpendicular, or neither. Be sure to state why.

a. $3y - 7 = 3x + 2$ and $y = 3x + 2$

b. $2x + 3y = 6$ and $y = \frac{3}{2}x - 8$

Part 2: Solving Equations

<http://bitly.ws/8EXf>

- I will be able to use inverse operations to solve multi-step equations for a missing value.
- I will use knowledge of factoring to solve quadratic equations.
- I will use knowledge of the quadratic formula to solve quadratic equations
- Using substitution, I will verify that my solutions are correct.

5. Show your work to solve for x. Be sure to verify your solution:

<p>a. $5x + 3 = -12$</p> <p>Check:</p>	<p>b. $(6x - 8) - (5x + 9) = 3$</p> <p>Check:</p>
<p>c. $7x - 8x + 4 = 5x - 2$</p> <p>Check:</p>	<p>d. $3(x - 2) = 18$</p> <p>Check:</p>
<p>e. $(3x + 2) - 2(x + 4) = 7$</p> <p>Check:</p>	<p>f. $\frac{x+2}{3} = \frac{8}{15}$</p> <p>Check:</p>
<p>g. $\frac{18}{x} = 6$</p> <p>Check:</p>	<p>h. $\frac{5}{7} = \frac{10}{x+2}$</p> <p>Check:</p>

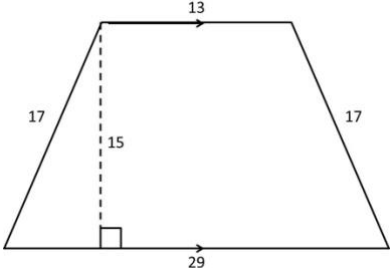
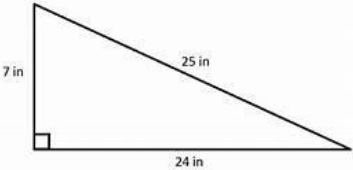
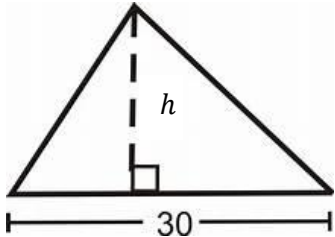
Part 3: 2D Shapes

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- I will successfully find the area of 2-dimensional shapes such as a circle, triangle, square, rectangle, and trapezoid.
- I will successfully find the perimeter of 2-dimensional shapes such as a circle, triangle, square, rectangle, and trapezoid.
- Given the area of a 2-dimensional shape, I will apply knowledge of solving equations to find a missing dimension.

8. Find the missing information in each questions below. Leave answers exact and include units.

<p>a. Given a circle with a radius of 4 inches, find the area of the circle:</p>	<p>b. Given a circle with a diameter of 9 feet, find the circumference of the circle:</p>
<p>c. Given a circle with an area of $36\pi \text{ cm}^2$, find the diameter of the circle:</p>	<p>d. Given the trapezoid, find the area:</p> 
<p>e. Given the triangle, find the area:</p> 	<p>f. The area of the triangle below is 22in^2, find the height:</p> 
<p>g. Given a square with side lengths of 4, find the area and perimeter:</p>	<p>h. Given a rectangle with a width of 3cm and a length of 5cm find the area and perimeter:</p>

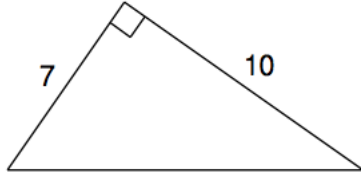
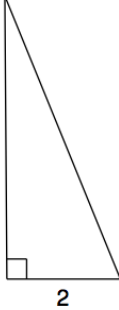
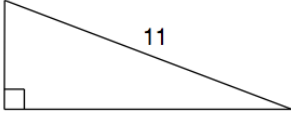
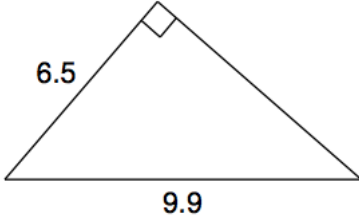
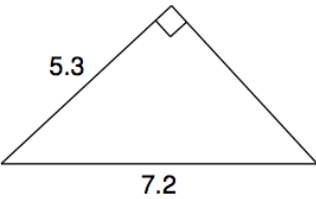
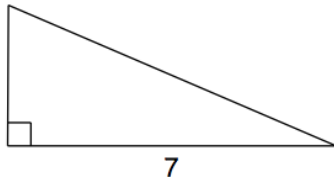
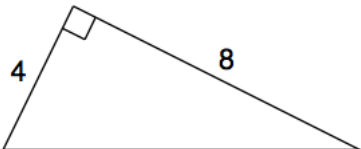
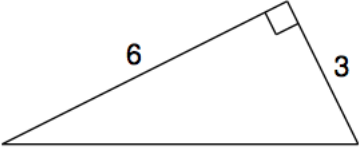
Part 4: Right Triangles

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- Given two sides of a right triangle, I will be able to solve for the missing side by using the Pythagorean theorem.
- I will use the Pythagorean Theorem to classify a triangle by its angle measurements.
- I will use the Pythagorean Theorem to find the distance between two coordinate points.

9. Use the Pythagorean theorem to solve the missing side of each triangle below:

<p>a.</p> 	<p>b.</p> 
<p>c.</p> 	<p>d.</p> 
<p>e.</p> 	<p>f.</p> 
<p>g.</p> 	<p>h.</p> 

10. Use the Pythagorean Theorem to determine if the following triangles are right, acute, or obtuse:

a. 5, 7, 11	b. 15, 4, 12	c. 13, 12, 5
d. 3, 4, 5	e. 6, 8, 9	f. 10, 6, 8

11. Use what you know about the Pythagorean Theorem to find the length of the hypotenuse, \overline{AB} .

