

St. Edmund Preparatory High School  
Mathematics Department

Pre-Geometry Summer Assignment  
(Sophomores/Freshmen)

Name: \_\_\_\_\_

All students who will be taking Geometry are required to complete this assignment. Answer all questions. This assignment will be collected during the first week of classes. In the spaces provided, clearly indicate the necessary steps, including appropriate formula substitutions, diagrams, graphs, charts, etc. You may use a calculator. All students will be tested on this material in September.

Find each sum, difference, product or quotient.

1. $-15 + 6$	2. $18 - (-3.2)$	3. $-9 - 22$
4. $20 + (-7)$	5. $11(-8)$	6. $-\frac{22}{11}$
7. $(-15)(-2)$	8. $\frac{1}{7} + \frac{5}{7}$	9. $48 - 55$
10. $(-\frac{1}{2}) - (-\frac{3}{4})$	11. $-1.2(9.3)$	12. $\frac{10.5}{-1.2}$

Find each product or quotient and write your answer as a fraction in simplest form.

13. $\frac{2}{21} \div \frac{1}{3}$	14. $\frac{1}{9} \times \frac{3}{4}$	15. $-\frac{2}{21} \div (-\frac{2}{15})$
-------------------------------------	--------------------------------------	--

Write the reciprocal of each number.

<b>16.</b> $-\frac{3}{7}$	<b>17.</b> $\frac{8}{24}$
---------------------------	---------------------------

a. Express each percent as a fraction in simplest form.

b. Express each percent as a decimal.

<b>18.</b> 20%	<b>19.</b> 7.5%	<b>20.</b> 140%
a.	a.	a.
b.	b.	b.

Find the number that satisfies the question.

<b>21.</b> 50% of what number is 31?	<b>22.</b> What number is 110% of 51?
--------------------------------------	---------------------------------------

Order the following numbers from least to greatest.

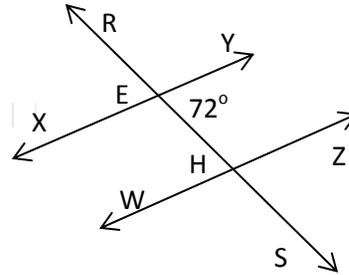
<b>23.</b> $4\frac{4}{5}$ , 4.85, $2\frac{5}{8}$ , 2.6	<b>24.</b> 0.5, $-\frac{1}{7}$ , $-0.2$ , $\frac{1}{3}$
--	---

Show all work necessary to solve the following questions.

<p><b>25.</b> What is the slope of the equation <math>5y = 2x + 10</math>?</p>	<p><b>26.</b> Sketch the graph of the equation <math> x - 3  + 1 = y</math></p>
<p><b>27.</b> What is the slope of the line that is perpendicular to the line whose equation is <math>5x - 3y = 2</math>?</p>	<p><b>28.</b> What is the slope of the line parallel to the line whose equation is <math>y - 5x = 4</math>?</p>
<p><b>29.</b> What is the solution set of the equation <math>x^2 - 4x = 0</math>?</p>	<p><b>30.</b> What is the solution set of the equation <math>x^2 - 2x - 3 = 0</math>?</p>

**31.** What is the reciprocal of  $\frac{1}{x}$  where  $x \neq 0$ ?

**32.** In the accompanying diagram, transversal RS intersects parallel lines XY and WZ at E and H. If  $m \angle HEY = 72$ , what is the  $m \angle ZHS$ ?



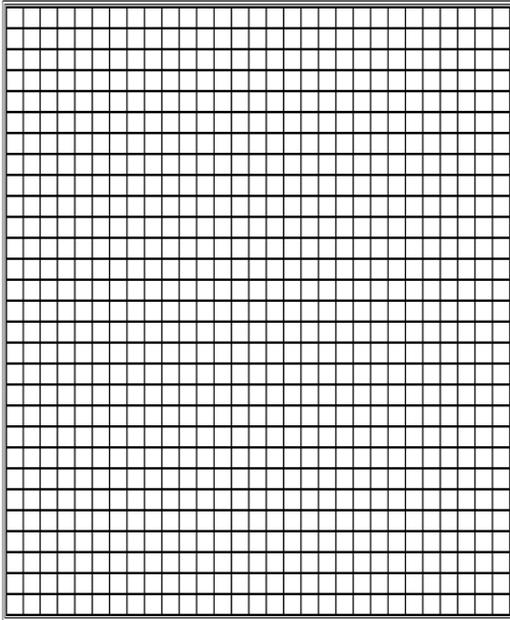
**33.** If the measures of two angles of a triangle are 55 degrees and 70 degrees, what type of triangle is it?

**34.** The area of a triangle is 24 square centimeters. If the base of this triangle is 8 centimeters, find the length of the altitude of the triangle in centimeters.

**35.** What is the circumference of a circle whose radius is 6? (State your answer in terms of  $\pi$ )

**36.** If the lengths of the legs of a right triangle are 5 and 12, what is the length of the hypotenuse?

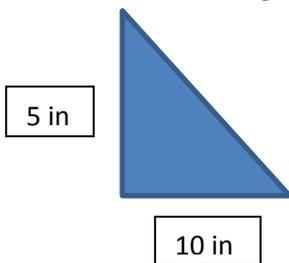
**37.** Graph parallelogram ABCD on the graph below with vertices A(2,0), B(7,0), C(10,3), D (5,3). What is the area of parallelogram ABCD?



**38.** The following parallelogram has a base that is 2.5 times its height. If the parallelogram is 2 miles high, what is the area of this parallelogram?



- 39.** a. Find the area of the right triangle below.  
b. Find the length of the hypotenuse in simplest radical form.



**40.** Solve the following quadratics by completing the square.

a.  $h^2 + 6h = 16$

b.  $m^2 - 13 = 12m$

c.  $2q^2 - 8q = 40$