Brushing up on Basic skills

To get you _ready_ for

Geometry

NAME:_____

Directions: Use a pencil and scratch paper to answer each question. Be sure to show all work. The purpose of this packet is to give a review of basic skills needed to be successful in Geometry.

DO NOT USE A CALCULATOR!!

Items covered in this packet:

- ❖ Simplifying radicals
- ❖ Simplifying expressions
- ❖ Solving Equations
- ❖ Solving Systems of Equations
- ❖ Distance & Midpoint between coordinate points
- ❖ Slope of lines & Graphing Linear functions
- ❖ Pythagorean Theorem
- ❖ Area and Perimeter
- ❖ Geometry vocabulary

ALL students will be expected to complete this review and will be responsible for the information contained. Teachers will administer a series of quizzes over this material in the first few weeks of school after reviewing in class. Pre AP and AP courses will test over review material within the first few weeks of school. ALL students should receive this review before the end of the previous school year from their math teacher or access a copy online over the summer. Copies of this review and answer keys are posted on the MHS Math Department website. If you find you need help at any time over the summer, visit the MHS Math Department page for a list of video tutorials and practice sites. Visit http://www.alvinisd.net/domain/1489 or scan the code below.

We can't wait to see you next year!! Hoka Hey!

~MHS Mathematics Department

BRUSHING UP ON <u>BASIC SKILLS</u>
FOR STUDENTS ENTERING
<u>GEOMETRY</u>
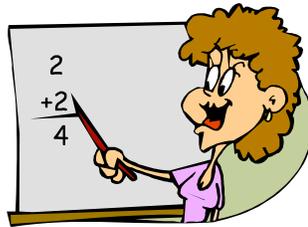
WORK THE FOLLOWING PROBLEMS <u>WITHOUT A CALCULATOR</u>. GOOD LUCK!

Simplify the following.(Hint: Make a factor tree.)

1) $\sqrt{36}$ 2) $\sqrt{64}$ 3) $\sqrt{58}$ 4) $\sqrt{216}$ 5) $\sqrt{400}$ 6) $\sqrt{75}$ 7) $\sqrt{99}$

8) $\sqrt{4x^2}$ 9) $\sqrt{16x^2y^4}$ 10) $\sqrt{25a^2b^{10}c^{12}}$

Simplify the following.(Hint: Use PEMDAS)

11) $3z^2 - (12z + 13z^2) + 6$ 12) $15c - 3c + 2c - 14c^2 + \frac{9}{3}c + 4$ 13) $\frac{14}{5}k^2 + \frac{11}{5}k^2$

14) $(2 - (4 - 2)) \times \frac{1}{3} \div 3$ 15) $1 + 5 + \frac{2}{3} + \frac{9}{4} - 1$

Solve.

16) $2(x + 12) = 25$ 17) $\frac{1}{4}x + 5 = 7$ 18) $\frac{2}{3}d - 4 = -6$

19) $\frac{5}{2}h + 12 - 4 = -2$

Solve the system of equations using substitution.

20) $x - 3y = -10$ 21) $y - x = 5$
     $2x + y = 1$ $3x + y = 1$

Solve the system of equations using elimination.

22) $x + y = 8$ 23) $x + 2y = 10$
     $2x - y = 4$ $3x - y = 9$

Find the <u>midpoint</u> and <u>distance</u> of the following pairs of coordinates.
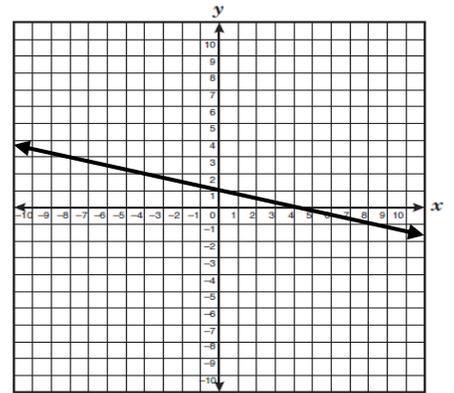
24) (-4, 3) and (8, 7)   25) (-8,-5) and (12,10)

Distance
D= $\sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$
Midpoint
$(\frac{(x_2 - x_1)}{2}, \frac{(y_2 - y_1)}{2})$

Find the slope and write the equation of the following lines in <u>Point Slope</u> form,

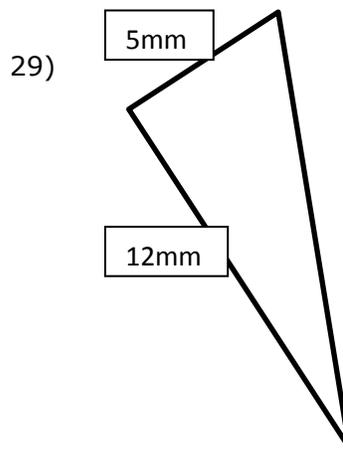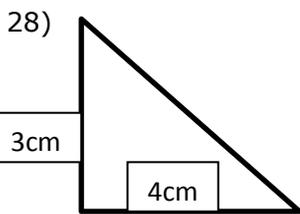**$y - y_1 = m (x - x_1)$.**

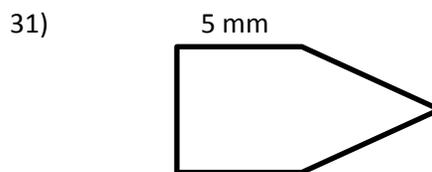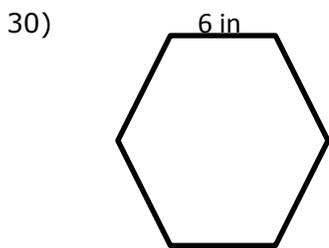26) The line between (2, 3) and (4, 9)   27)

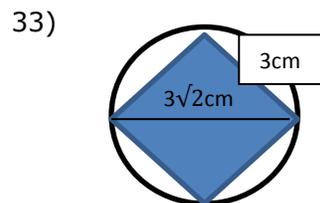**Solving for the missing side in the following right triangles using Pythagorean Theorem,**

$a^2 + b^2 = c^2$

28)

3cm

4cm

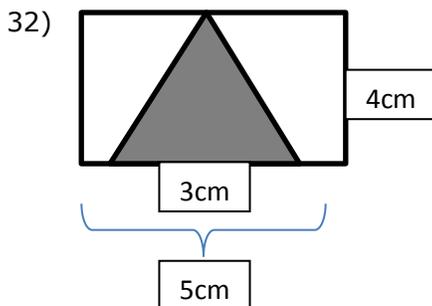29)

5mm

12mm

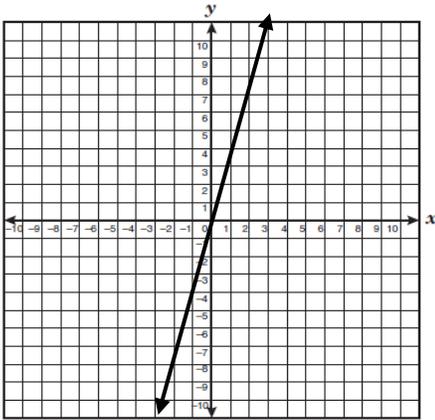**Find the perimeter of the following regular polygons (all sides are equal).**

30)   6 in   31)   5 mm

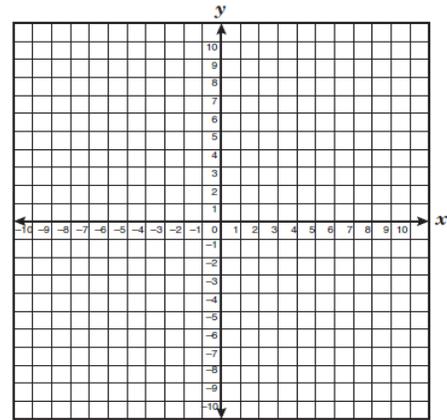**Find the area of the unshaded portion in the following figures.**

32)   33)

4cm   3cm
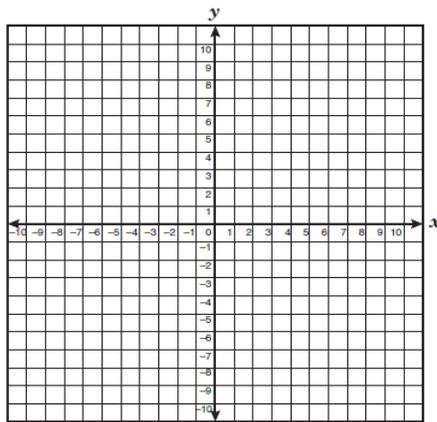
3cm $3\sqrt{2}$cm

5cm

34) Find the slope of the line. $m = \frac{rise}{run} = $ _____

X	Process	Y

35) Fill in the table and graph **y = -3x + 6**

36) Fill in the table and graph **y = $\frac{1}{5}$x -3**

X	Process	Y

37) Fill in the table and graph **y = $\frac{-2}{3}$x +4**

X	Process	Y

38)

Define the following **math vocabulary** in your <u>own words</u> and <u>draw a sketch</u> of each:

Point-

Line-

Plane-

Perpendicular-

Parallel-

Bisect-

obtuse angle-

acute angle-

right angle-

adjacent-

line segment-

ray-

perimeter-

area-