## Math 6: Homework 2.8

## Geometry review:

1. a) Draw the graph of the equation $x^{2}+y^{2}-4=0$.
b) Draw the graph of the equation $(x+3)^{2}+(y-1)^{2}-1=0$.
c) Draw the graph of the equation $x y=0$.
d) Draw the graph of the equation $x^{2}+y^{2}=0$.
2. Find the height and area of the figure below. Lengths of three sides are given; the two marked angles are right angles.

3. 

Let $A B C D$ be a quadrilateral such that $A B=B C=$ $C D=A D$ (such a quadilateral is called rhombus). Let $M$ be the intersection point of $A C$ and $B D$.
(a) Show that $\triangle A B C \cong \triangle A D C$
(b) Show that $\triangle A M B \cong \triangle A M D$
(c) Show that the diagonals are perpendicular and that the point $M$ is the midpoint of each of the diagonals.

4. Given three lengths $\boldsymbol{a}, \boldsymbol{b}, \boldsymbol{c}$, construct a triangle with sides $\boldsymbol{a}, \boldsymbol{b}, \boldsymbol{c}$.
a)

b) $\qquad$
c)
5. Draw a circle and find its center
6. We were looking at the problems from geometry quiz on this website:
https://www.mathgametime.com/games/geometry-quiz
You can try to get as many points as you can, and we will find the winner
(A proof is required - a photo/screenshot with your final score)

