Math 173 – Quiz #1

January 22, 2016 **Name:** _____
Instructor: Patricia Wrean

Total: 40 points

1. Use your calculator to calculate the approximate value of the following. Round to two decimal places. (3 points)

   a) tan –85.1° _____

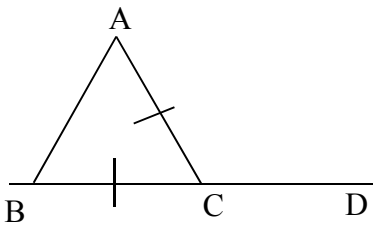
   b) sin 254° _____

   c) csc 131.3° _____

2. Give the exact function value of the following. Show your work. (2 points)

   cot 270° _____

3. Angle ACD measures 128º. Calculate the size of angle ABC as shown in the diagram. Show your work. (3 points)



4. Calculate θ given the following information. Round your answer to the nearest integer. (6 points)

   a) $\sin\theta = 0.88$ and $0 \le \theta \le 360°$

   b) $\tan\theta = 0.32$ and $\cos\theta$ is negative

5. State the domains of the functions $f(x) = 2x - 5$, $g(x) = \frac{1}{\sqrt{x-4}}$ and $h(x) = \frac{1}{\sqrt{x}-4}$. Also, calculate $h(1)$. (5 points)

domain of f: _____

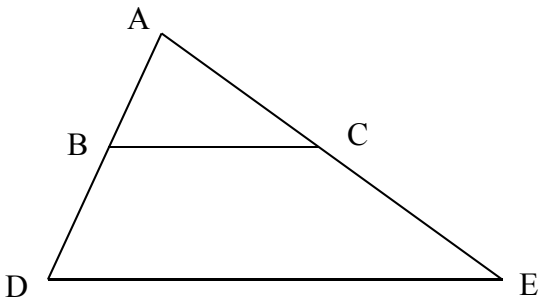
domain of g: _____

domain of h: _____

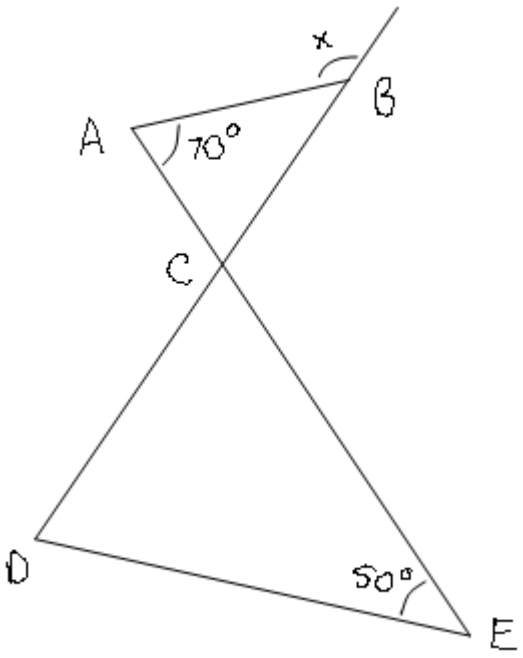
$h(1)$: _____

For the following two questions, show your work by labeling any congruent angles on the diagram, stating which triangles are similar and why if you are using similarity properties, and clearly labeling which sides you are using if setting up a ratio.

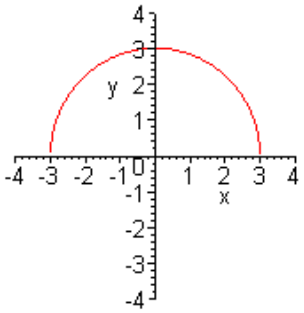
6. AB is 4, and BC and BD are both 6. Line DE is parallel to BC. Find DE. (4 points)



7. In the diagram below, AC = 2, BC = 3, CD = 4, and CE = 6. Calculate angle *x* as shown in the diagram. (6 points)



8. Consider the function graphed below. Locate the maximum point on the graph and state whether it's an absolute or relative maximum. Also, indicate on the graph the regions where the function is increasing/decreasing. Lastly, state the domain and range of this function. Just in case it's not clear, the graph starts and ends at the points (±3,0). (5 points)



9. A weather balloon is just about to be launched, and is currently tied to the ground by two wire cables. The left cable is 3.5 metres long. The left and right cables make angles with the ground of 48º and 35º, respectively. Assuming that the ground is perfectly level and the cables form straight lines, what is the length of the right-hand cable? (6 points)