

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

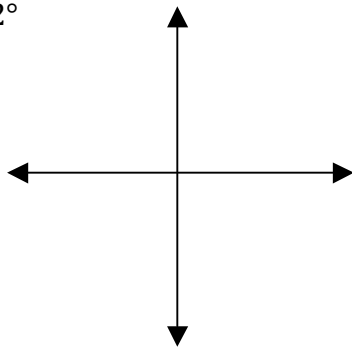
TA: \_\_\_\_\_

**Math 11 Pre-Calculus LG 3 Ver A**

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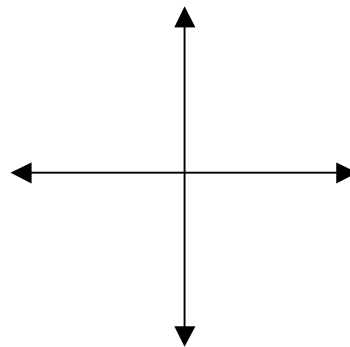
1. Without measuring, sketch the following angles in standard position. For each angle, state the reference angle. (2 marks)

a)  $112^\circ$



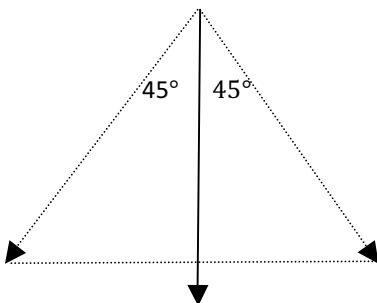
Reference angle: \_\_\_\_\_

b)  $260^\circ$



Reference angle: \_\_\_\_\_

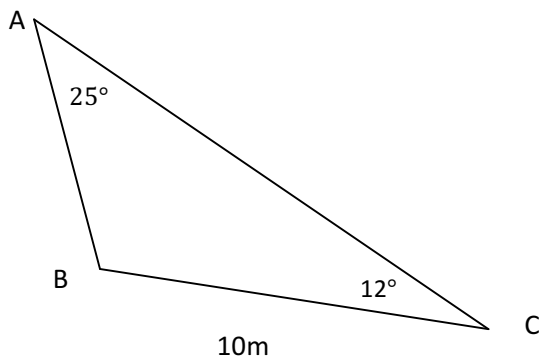
2. A large grandfather clock has a pendulum that is 4m long. The pendulum swings  $45^\circ$  to the left and right of vertical. What *horizontal* distance does the tip of the arm move in one complete swing? Give an *exact* answer. (2 marks)



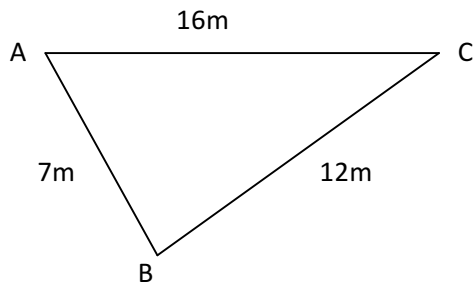
3. Determine the exact values of  $\sin \theta$ ,  $\cos \theta$ , and  $\tan \theta$  if the terminal arm of an angle in standard position passes through the point (3,-5). (3 marks)

4. Solve for  $\theta$  if  $\cos \theta = -\frac{\sqrt{3}}{2}$ , where  $0^\circ \leq \theta < 360^\circ$ . (2 marks)

5. Find the length of side AB. (2 marks)



6. Determine the measure of angle C to 2 decimal places. (2 marks)



7. A radio tracking station locates a fishing trawler 6.4 nautical miles away, and a sailboat 10.3 nautical miles away. At the station, the angle between the lines of sight to the two ships is  $28^\circ$ . How far apart are the ships? (2 marks)

8. Sandra wanted to find the height of the school flag pole. She measured the angle to the top of pole to be  $51^\circ$ . She walked 12m closer to the pole and measured an angle of  $83^\circ$ . What is the height of the flag pole? Give your answer to 2 decimal places. (3 marks)

