Ch. 1 Trigonometry Exam Review Question Set

Diagrams are not drawn to scale.
Your scientific calculator must be in DEGREE mode.

1. Evaluate to four decimal places:

   a) $\tan 25°$ b) $\sin 10°$ c) $\cos 30°$
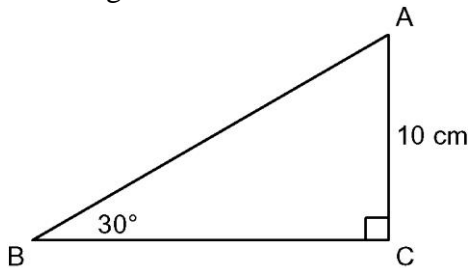
2. Find the missing angle, to one decimal place:
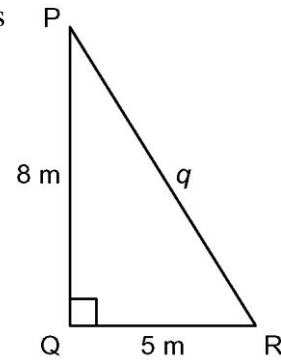
   a) $\tan A = 0.3269$ b) $\sin Q = 0.9960$ c) $\cos X = 0.5$

3. Solve for all angles and side lengths:

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5. As shown in the diagram, the highest point along a cliff is 80 m above the lakeshore. A surveyor stands on the top of the cliff, looking through a 1.5 m tall transit instrument. He spots a boat out on the lake, at an angle of depression of 38°. How far, to the nearest tenth of a metre, is it from the boat to the base of the cliff?
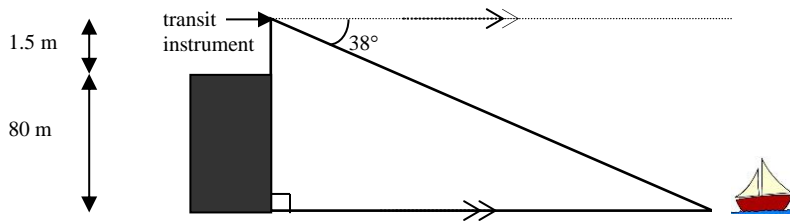

*The **arrows** in the diagram indicate that the line segments are **parallel**.*

6. Michael stands 10.0 m from the base of a building. He measures the angle of elevation to the top of the building to be 65°. Michael's measurement was made from 1.5 m above the ground. Determine the height of the building to the nearest metre.

7. Use the Sine Law to solve for length j.
   Round to the nearest tenth.
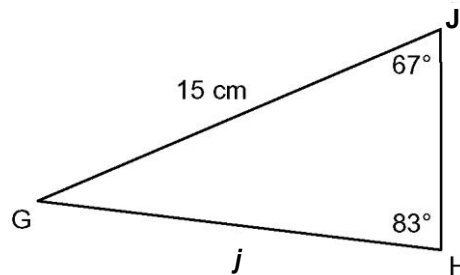
8. Use the Cosine Law to find length y.
   Round to the nearest tenth.
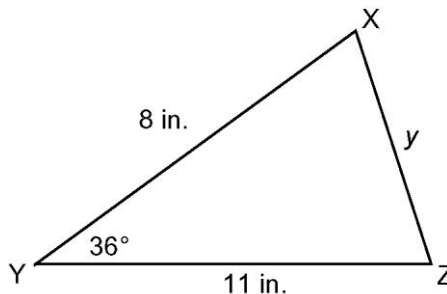
9. Using the information that follows,
    a) Draw and label a diagram.
    b) How far is each hotel from the dock? Round lengths to the nearest metre.

    A ferry is used to transport guests from the dock to two hotels across a large lake.
    The hotels are located 550 m apart. The first hotel is at a 49° angle between the dock and the
    second hotel. The second hotel is at a 56° angle between the dock and the first hotel.

10. Classify each statement as either **TRUE** (T) or **FALSE** (F).
    a) You can easily solve a triangle using the sine law if you are given the length of all three
       sides.
    b) The sine, cosine, and tangent ratios can only be used for right triangles.
    c) You can use the sine law or cosine law for a right triangle.
    d) An angle of elevation is always measured from the horizontal.

11. *Multiple Choice*: Which statement is true about right triangles?
    A The opposite side is always the shortest side in the triangle.
    B The adjacent side is always the shortest side.
    C The hypotenuse is always the longest side.
    D All angles are equal.

12. A 10 m long ladder is resting against a wall. The top of the ladder is 9 m above the ground.
    What angle, to the nearest tenth, does the ladder make with the ground?

13. **Find your Unit 1 Trigonometry Test from your notebook.**
    Go through each question, **AND** make sure you understand how to get the correct answer.

**CHALLENGE PROBLEM. ONLY COMPLETE IF EVERYTHING ABOVE IS
COMPLETE AND CORRECT.** Using the figure below, solve for x to one decimal place.
(*Note: there is more than one way to solve this problem*).
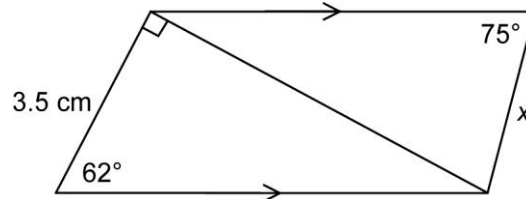
FINAL ANSWERS

1) a) 0.4663   b) 0.1736   c) 0.8660
2) a) 18.1°   b) 84.9°   c) 60°
3) BC = 17.3 cm, AB = 20 cm, $\angle$A = 60°
4) q=9.4 m, $\angle$P= 32°, $\angle$R=58°
5) 104.3 m   6) 23 m   7) 13.9 cm   8) $y = 6.5$ inches
9) first hotel: 472 m; second hotel: 430 m
10) a) F   b) T   c) T   d)   T
11) C   12) 64.2°   **CHALLENGE PROBLEM:** $x = 3.2$ cm