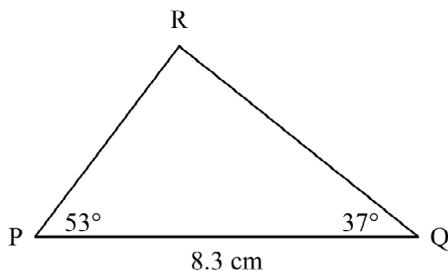


PreCalc 11 Chapter 6 Rev Pack v1**Multiple Choice**

Identify the choice that best completes the statement or answers the question.

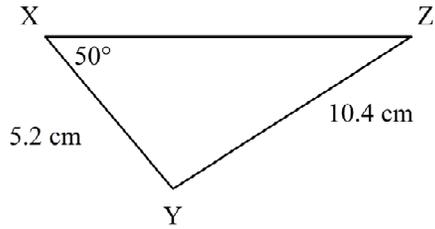
- _____ 1. Point P(3, 5) is on the terminal arm of an angle θ in standard position. Determine the exact value of $\sin \theta$.
- A. $\frac{5}{\sqrt{34}}$ B. $\frac{3}{\sqrt{34}}$ C. $\frac{\sqrt{34}}{5}$ D. $\frac{8}{\sqrt{34}}$
- _____ 2. Point P(1, 3) is on the terminal arm of an angle θ in standard position. To the nearest tenth, determine the distance from the origin to P.
- A. 2.8 B. 2.0 C. 4.0 D. 3.2
- _____ 3. Point P(x, y) is on the terminal arm of a 35° angle in standard position. The distance r between P and the origin is 6. To the nearest tenth, determine the coordinates of P.
- A. (4.9, 3.4) B. (3.4, 4.9) C. (2.1, 5.6) D. (6.9, 9.8)
- _____ 4. A wheelchair ramp is 5.5 m long. Its angle of inclination is 9° . Calculate the rise of the ramp to the nearest tenth of a metre.
- A. 0.8 m B. 5.4 m C. 3.5 m D. 0.9 m
- _____ 5. A guy wire is attached to a tower at a point that is 5.8 m above the ground. The angle between the wire and the level ground is 56° . To the nearest tenth of a metre, how far from the base of the tower is the wire anchored to the ground?
- A. 7.0 m B. 8.6 m C. 3.2 m D. 3.9 m
- _____ 6. A ladder leans against a wall. The base of the ladder is on level ground 1.2 m from the wall. The angle between the ladder and the ground is 74° . To the nearest tenth of a metre, how far up the wall does the ladder reach?
- A. 4.4 m B. 1.2 m C. 4.2 m D. 0.3 m
- _____ 7. A flagpole casts a shadow that is 21 m long when the angle between the sun's rays and the ground is 42° . Determine the height of the flagpole to the nearest metre.
- A. 19 m B. 16 m C. 23 m D. 14 m

- _____ 8. An angle θ has its terminal arm in Quadrant 2. Which primary trigonometric ratio is greater than 0?
A. $\cos \theta$ **B.** $\sin \theta$ **C.** $\tan \theta$ **D.** all 3 ratios
- _____ 9. Point P(5, 1) lies on the terminal arm of an angle in standard position. What are the coordinates of point P when it is reflected in the y -axis? What is the reference angle for this angle to the nearest degree?
A. P'(-5, 1); 11° **C.** P'(-1, 5); 191°
B. P'(5, -1); 169° **D.** P'(1, -5); 101°
- _____ 10. Determine the possible coordinates (x, y) of a terminal point for the angle 120° in standard position. The value of r is 7, where $r = \sqrt{x^2 + y^2}$.
A. $\left(-\frac{7}{2}, \frac{7\sqrt{3}}{2}\right)$ **C.** $\left(\frac{2}{7}, -\frac{2}{7\sqrt{3}}\right)$
B. $\left(\frac{2}{7\sqrt{3}}, -\frac{2}{7}\right)$ **D.** $\left(\frac{7\sqrt{3}}{2}, -\frac{7}{2}\right)$
- _____ 11. In $\triangle ABC$, $AB = 3.9$ cm and $BC = 2.8$ cm. For what value of $\angle A$ is $\triangle ABC$ a right triangle with $\angle C = 90^\circ$? Give the answer to the nearest degree.
A. 90° **B.** 136° **C.** 5° **D.** 46°
- _____ 12. For $\triangle PQR$, determine the length of QR to the nearest tenth of a centimetre.



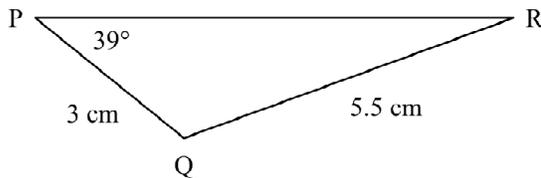
- A.** 4 cm **B.** 6.6 cm **C.** 5 cm **D.** 13.8 cm
- _____ 13. In $\triangle PQR$, $PQ = 7$ cm and $\angle P = 49^\circ$. For what value of QR is $\triangle PQR$ a right triangle with $\angle R = 90^\circ$? Where necessary, give the answer to the nearest tenth.
A. 7 cm **B.** 9.3 cm **C.** 6.4 cm **D.** 5.3 cm

- _____ 14. For $\triangle XYZ$, determine the measure of $\angle Z$ to the nearest degree and the measure of XZ to the nearest tenth of a centimetre.



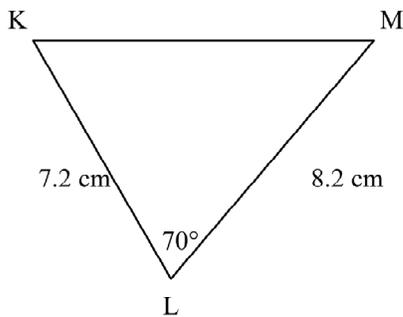
- A. $\angle Z = 29^\circ$; $XZ = 6.5$ cm C. $\angle Z = 41^\circ$; $XZ = 4.2$ cm
B. $\angle Z = 23^\circ$; $XZ = 13.0$ cm D. $\angle Z = 21^\circ$; $XZ = 8.3$ cm

- _____ 15. In $\triangle PQR$, determine the measure of $\angle Q$ to the nearest degree.



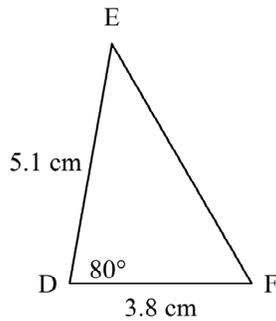
- A. 141° B. 160° C. 121° D. 59°

- _____ 16. In $\triangle KLM$, determine the length of KM to the nearest tenth of a centimetre.



- A. 78.7 cm B. 9.9 cm C. 8.9 cm D. 8.4 cm

- ___ 17. In $\triangle DEF$, determine the measure of $\angle F$ to the nearest degree.



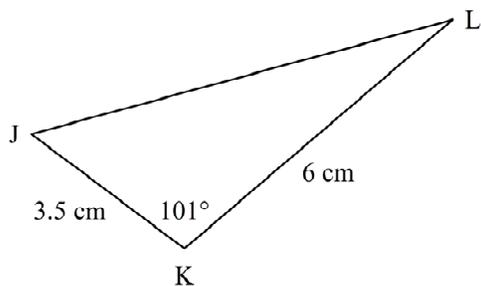
- A. 60° B. 50° C. 0° D. 47°
- ___ 18. In $\triangle ABC$, $AB = 9$ cm, $BC = 6$ cm, and $\angle A = 47^\circ$, how many triangles can be drawn?
- A. 0 C. 1
B. 2 D. 1 isosceles triangle

Short Answer

19. Determine the exact value of $\tan 45^\circ$.
20. A tree is supported by a guy wire. The guy wire is anchored to the ground 6.0 m from the base of the tree. The angle between the wire and the level ground is 60° . To the nearest tenth of a metre, how far up the tree does the wire reach?
21. A flagpole is 15.0 m high. At a certain point, the angle between the ground and Jon's line of sight to the top of the flagpole is 63° . To the nearest tenth of a metre, how far is Jon from the flagpole?

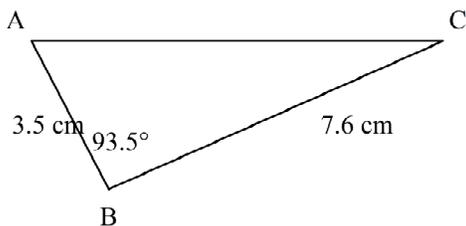
22. Determine the exact value of $\cos 30^\circ$.
23. In $\triangle DEF$, $DE = 10$ cm, $EF = 13$ cm, and $\angle D = 42^\circ$. What type of triangle is $\triangle DEF$?

24. For $\triangle JKL$, can the Sine Law be used to determine the length of JL ? If your answer is yes, determine the length of JL to the nearest tenth of a centimetre. If your answer is no, explain why.

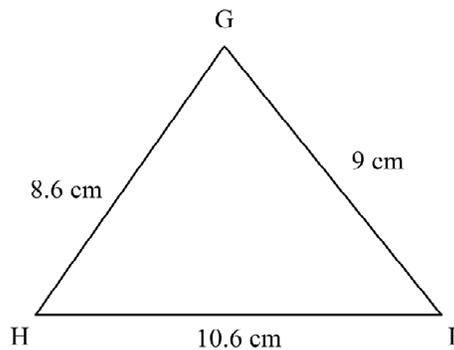


25. Given the following information about $\triangle ABC$, determine how many triangles can be constructed.
 $a = 5.7$ cm, $c = 7.5$ cm, $\angle A = 43^\circ$

26. For $\triangle ABC$, can the Cosine Law be used to determine the length of AC ? If your answer is yes, determine the length to the nearest tenth of a centimetre. If your answer is no, explain why.



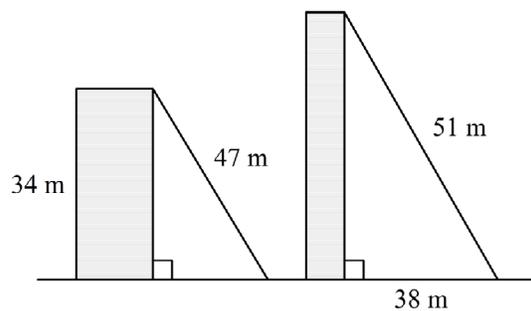
27. In $\triangle GHI$, determine the measures of all the angles to the nearest degree.



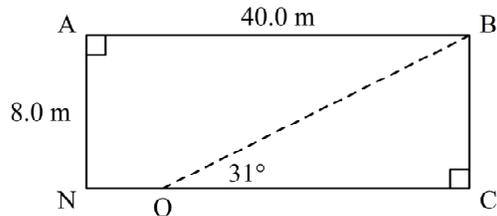
28. In $\triangle ABC$, $\angle B = 42^\circ$, $AB = 3.8$ cm, and $BC = 6.6$ cm. Determine the measure of $\angle C$ to the nearest degree.

Problem

29. Guy wires are attached to buildings as shown. A student says the angles of inclination of the wires are the same. Is the student correct? Justify your answer.



30. A rectangular lawn has the dimensions shown. A gardener wants to use an electric lawnmower to mow the lawn. The electrical outlet is located at O.
- Determine the length of cord needed to reach corner B, to the nearest tenth of a metre.
 - Determine the distance between the electrical outlet and corner N, to the nearest tenth of a metre.
- Explain your work.



31. Point P(3, -4) is a terminal point of an angle θ in standard position.
- Determine the ratios $\cos \theta$, $\sin \theta$, and $\tan \theta$.
 - Determine the measure of θ to the nearest degree.
- Show your work.

32. A coast guard patrol boat is due west of the Carmanah lighthouse. An overturned fishing boat is due north of the lighthouse. The patrol boat travels 7.6 km directly to the fishing boat. The angle between due east and the patrol boat's path is 48° . To the nearest tenth of a kilometre, determine the distance between the fishing boat and the lighthouse. Explain your work.

Name: _____

ID: A

33. In $\triangle ABC$, $AB = 6$ cm and $\angle A = 75^\circ$. Complete the chart below for your own values of BC.

Length of BC (cm)	Value of $\frac{BC}{AB}$	How does $\frac{BC}{AB}$ compare with $\sin A$?	Description of possible triangles
			No triangles are possible.
			1 isosceles triangle
			1 scalene triangle
			2 scalene triangles

34. Two divers are 60 m apart. Each diver sees a treasure chest on the sea floor. The treasure chest is vertically below the line between the divers. From the divers, the angles of depression to the treasure chest are 38° and 51° . To the nearest metre, how far is the treasure chest from each diver? Consider possible cases and show your work.