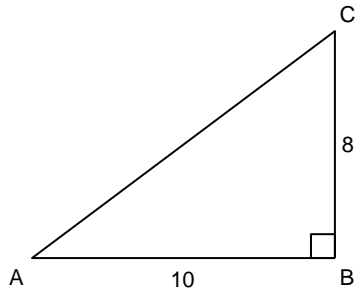


midterm review unit 2

Multiple Choice

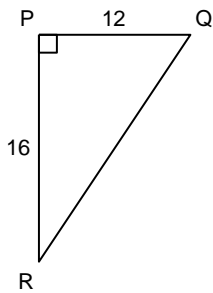
Identify the choice that best completes the statement or answers the question.

- ___ 1. Determine $\tan A$ and $\tan C$.



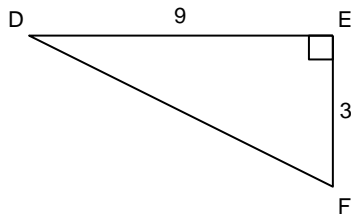
- a. $\tan A = 1.25$; $\tan C = 0.8$
b. $\tan A = 0.8$; $\tan C = 0.7809\dots$
c. $\tan A = 0.8$; $\tan C = 1.25$
d. $\tan A = 0.6247\dots$; $\tan C = 1.25$

- ___ 2. Determine $\tan Q$ and $\tan R$.



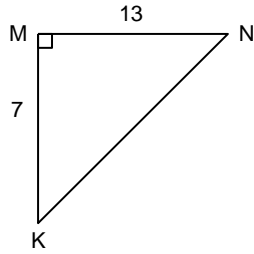
- a. $\tan Q = \sqrt{0.428571}$; $\tan R = 0.75$
b. $\tan Q = 1.3$; $\tan R = 0.75$
c. $\tan Q = 1.3$; $\tan R = \sqrt{0.571428}$
d. $\tan Q = 0.75$; $\tan R = 1.3$

- ___ 3. Determine the measure of $\angle D$ to the nearest tenth of a degree.



- a. 18.4°
b. 19.5°
c. 70.5°
d. 71.6°

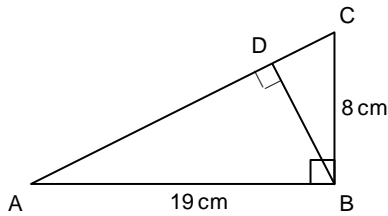
- ___ 4. Determine the measure of $\angle N$ to the nearest tenth of a degree.



- a. 57.4° b. 61.7° c. 32.6° d. 28.3°

___ 5. Calculate the angle of inclination, to the nearest tenth of a degree, of a road with a grade of 22%.
 a. 77.3° b. 77.6° c. 12.4° d. 12.7°

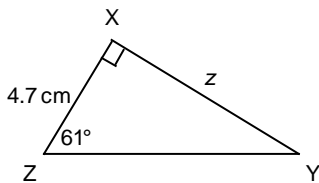
___ 6. Determine the measure of $\angle ABD$ to the nearest tenth of a degree.



- a. 65.1° b. 67.2° c. 22.8° d. 24.9°

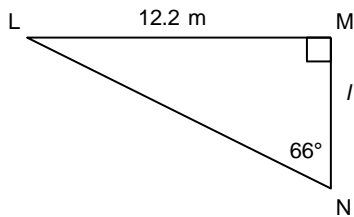
___ 7. A ladder leans against the side of a building. The top of the ladder is 5 m from the ground. The base of the ladder is 1.0 m from the wall. What angle, to the nearest degree, does the ladder make with the ground?
 a. 79° b. 11° c. 9° d. 83°

___ 8. Determine the length of side z to the nearest tenth of a centimetre.



- a. 9.7 cm b. 2.6 cm c. 5.4 cm d. 8.5 cm

___ 9. Determine the length of side l to the nearest tenth of a metre.



- a. 5.4 m b. 27.4 m c. 11.1 m d. 5.0 m

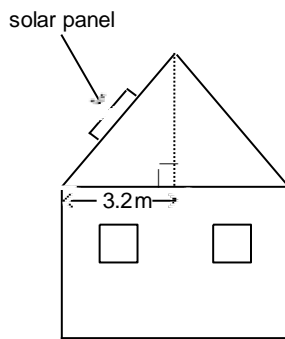
___ 10. A helicopter is ascending vertically. On the ground, a searchlight is 125 m from the point where the helicopter lifted off the ground. It shines on the helicopter and the angle the beam makes with the ground is 48° . How high is the helicopter at this point, to the nearest metre?

- a. 187 m b. 93 m c. 113 m d. 139 m

___ 11. 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 70° . How far up the wall does the ladder reach, to the nearest tenth of a metre?

- a. 0.4 m b. 1.3 m c. 3.5 m d. 3.3 m

___ 12. The angle of inclination of a solar panel on the roof of a cottage is 57° . Determine the height of the roof, to the nearest tenth of a metre.



- a. 3.8 m b. 4.9 m c. 2.1 m d. 5.9 m

___ 13. A road has an angle of inclination of 16° . Determine the increase in altitude of the road, to the nearest metre, for every 150 m of horizontal distance.

- a. 523 m b. 144 m c. 43 m d. 41 m

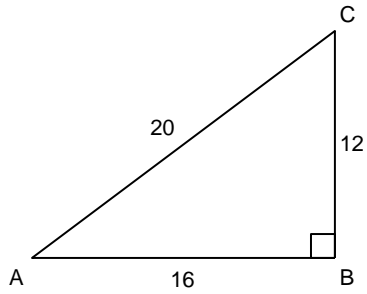
___ 14. A surveyor held a clinometer 1.5 m above the ground from a point 60.0 m from the base of a tower. The angle between the horizontal and the line of sight to the top of the tower was 21° . Determine the height of the tower to the nearest tenth of a metre.

- a. 157.8 m b. 23.0 m c. 24.5 m d. 65.8 m

___ 15. From a point 18 ft. from the base of a flagpole, Seema used a clinometer to sight the top of the flagpole. Seema held the clinometer 5 ft. 3 in. above the ground. The angle between the horizontal and the line of sight was 52° . Determine the height of the flagpole to the nearest foot.

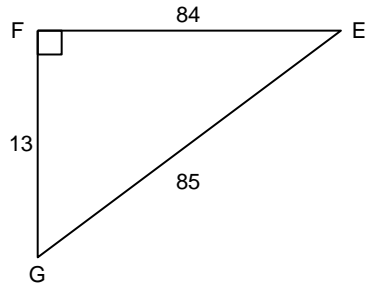
- a. 28 ft. b. 34 ft. c. 19 ft. d. 23 ft.

___ 16. Determine $\sin A$ and $\cos A$ to the nearest tenth.



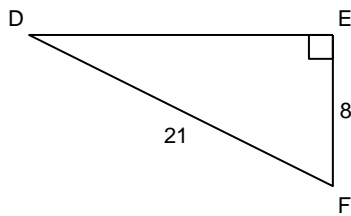
- a. $\sin A = 1.7$; $\cos A = 0.8$ c. $\sin A = 0.6$; $\cos A = 1.3$
 b. $\sin A = 0.8$; $\cos A = 0.6$ d. $\sin A = 0.6$; $\cos A = 0.8$

___ 17. Determine $\sin G$ and $\cos G$ to the nearest hundredth.



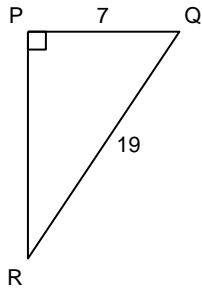
- a. $\sin G = 0.99$; $\cos G = 6.54$ c. $\sin G = 1.01$; $\cos G = 0.15$
 b. $\sin G = 0.15$; $\cos G = 0.99$ d. $\sin G = 0.99$; $\cos G = 0.15$

___ 18. Determine the measure of $\angle D$ to the nearest tenth of a degree.



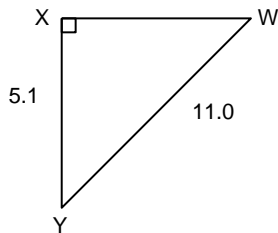
- a. 67.6° b. 69.1° c. 22.4° d. 20.9°

___ 19. Determine the measure of $\angle Q$ to the nearest tenth of a degree.



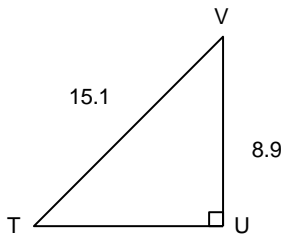
- a. 68.4° b. 69.8° c. 21.6° d. 20.2°

___ 20. Determine the measure of $\angle Y$ to the nearest tenth of a degree.



- a. 27.6° b. 62.4° c. 65.1° d. 24.9°

___ 21. Determine the measure of $\angle V$ to the nearest tenth of a degree.



- a. 59.5° b. 36.1° c. 30.5° d. 53.9°

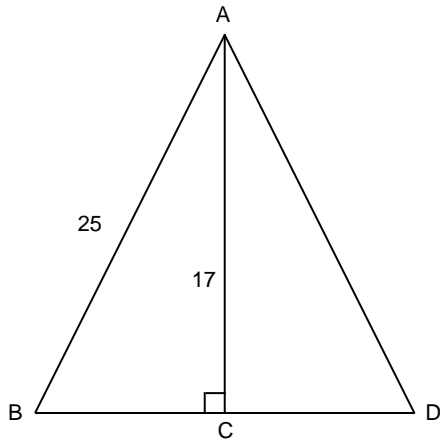
___ 22. A ladder is 13.0 m long. It leans against a wall. The base of the ladder is 3.7 m from the wall. What is the angle of inclination of the ladder to the nearest tenth of a degree?

- a. 73.5° b. 16.5° c. 74.1° d. 15.9°

___ 23. A rope that anchors a hot air balloon to the ground is 136 m long. The balloon is 72 m above the ground. What is the angle of inclination of the rope to the nearest tenth of a degree?

- a. 58.0° b. 62.1° c. 32.0° d. 27.9°

___ 24. Determine the measure of $\angle B$ to the nearest tenth of a degree.

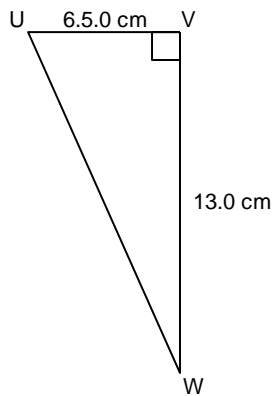


- a. 94.3° b. 34.2° c. 42.8° d. 47.2°

___ 25. The route along the Kettle Valley Railway rises approximately 850.0 m from Penticton to Chute Lake. The distance measured along this route is 43.6 km. Assume this is a straight path. Determine the angle of inclination of the path to the nearest tenth of a degree.

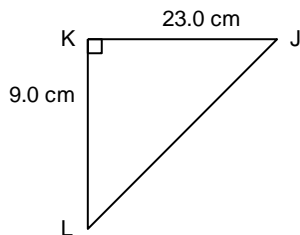
- a. 88.9° b. 2.9° c. 11.2° d. 1.1°

___ 26. Solve this right triangle. Give the measures to the nearest tenth.

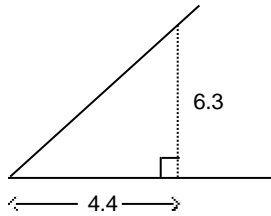


- a. $\angle U = 26.6^\circ$; $\angle W = 63.4^\circ$; $UW = 14.5$ cm c. $\angle U = 63.4^\circ$; $\angle W = 26.6^\circ$; $UW = 29.1$ cm
 b. $\angle U = 63.4^\circ$; $\angle W = 26.6^\circ$; $UW = 14.5$ cm d. $\angle U = 26.6^\circ$; $\angle W = 63.4^\circ$; $UW = 29.1$ cm

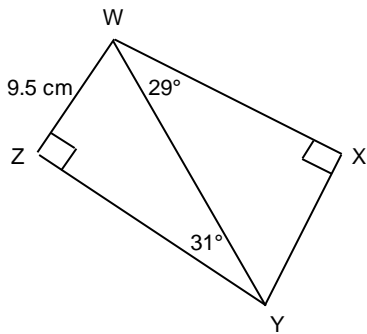
___ 27. Solve this right triangle. Give the measures to the nearest tenth.



- a. $\angle J = 68.6^\circ$; $\angle L = 21.4^\circ$; $JL = 24.7$ cm c. $\angle J = 21.4^\circ$; $\angle L = 68.6^\circ$; $JL = 24.7$ cm



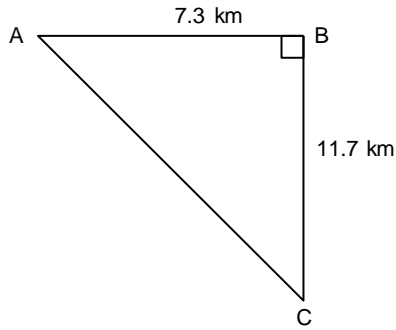
32. A tree is supported by a guy wire. The wire is anchored to the ground 7.0 m from the base of the tree. The angle of inclination of the wire is 65° . Calculate the length of the wire to the nearest tenth of a metre.
33. A guy wire supports a flagpole. The wire is anchored 8 ft. from the base of the pole and the angle of inclination of the wire is 47° . Calculate the length of the wire to the nearest foot.
34. Determine the length of WX to the nearest tenth of a centimetre.



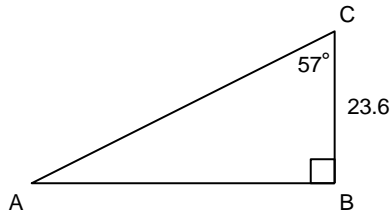
35. Francis wants to know the distance between the points where two guy wires are attached to a pole. The guy wires are anchored to the ground at the same point, 6.0 m from the base of the pole. The angle of inclination of the longer wire is 61° and the angle of inclination of the shorter wire is 41° . To the nearest tenth of a metre, how far apart are the points where the guy wires are attached to the pole?
36. From the roof of Yee's building, the angle of elevation of the top of a taller building is 37° . The angle of depression of the base of the building is 28° . The buildings are 21 m apart. Determine the height of the taller building to the nearest metre.

Problem

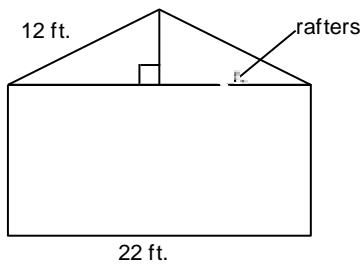
37. In the diagram below, a Coast Guard patrol boat is at C, which is 11.7 km south of Point Atkinson lighthouse. A sailboat in distress is at A, which is 7.3 km west of the lighthouse.
- How far is the patrol boat from the sailboat, to the nearest tenth of a kilometre?
 - At what angle to BC should the patrol boat travel to reach the sailboat? Give the answer to the nearest tenth of a degree.



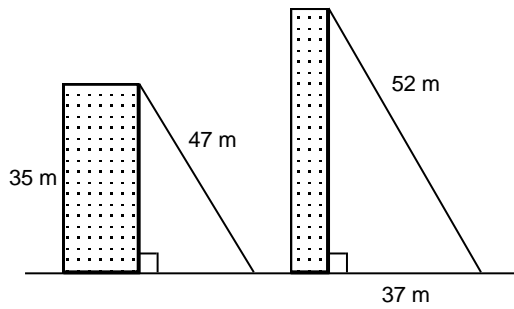
38. Determine the area of $\triangle ABC$ to the nearest tenth of a square unit. Determine its perimeter to the nearest tenth of a unit.



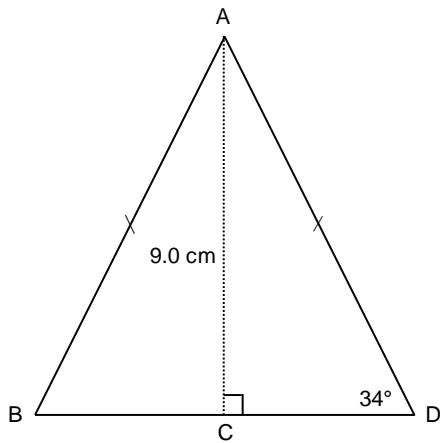
39. A boat was docked 30.0 m from the base of a cliff. A sailor used a clinometer to sight the top of the cliff. The angle between the horizontal and the line of sight was 74° . The sailor held the clinometer 1.5 m above the surface of the water. Determine the height of the cliff to the nearest tenth of a metre.
40. Sue used a clinometer to sight the top of a tall building from a point 160.0 m from the base of the building. The angle shown on the protractor was 46° . Sue held the clinometer 1.8 m above the ground. Determine the height of the building to the nearest tenth of a metre.
41. Calculate the angle of inclination of the roof to the nearest tenth of a degree.



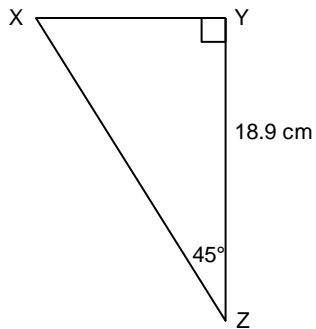
42. Guy wires are attached to buildings as shown. A student says the angles of inclination of the wires are the same. Is the student correct? Justify your answer.



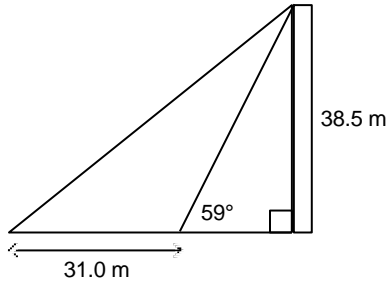
43. Determine the perimeter of this triangle to the nearest tenth of a centimetre.



44. Solve $\triangle XYZ$. Give the measures to the nearest tenth. Explain your strategy.



45. A Girl Guide measured the angle of elevation of the top of a monument as 59° . The height of the monument is 38.5 m. She then walked 31.0 m due west from the point where she measured the angle of elevation. Determine the angle of elevation of the monument from her new location to the nearest tenth of a degree.



46. Determine the length of the diagonals in this kite to the nearest tenth of a centimetre.

