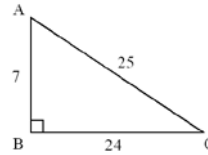


1. From the given diagram of $\triangle ABC$, determine the three trigonometric **RATIOS** for angle A.

(3 marks)

- a. $\sin(C) =$ _____.
- b. $\cos(C) =$ _____.
- c. $\tan(C) =$ _____.

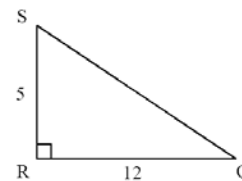


2. From the given diagram of $\triangle SRQ$, you will be required to determine sine and cosine **ratios**.

(6 marks)

- a. Before you can determine the sine and cosine ratios, there is one thing you need to do **FIRST**. What is it?
- b. Now, carry out what you need to do **FIRST**.
- c. Now, determine the following **ratios**:

- i. $\sin(S) =$ _____.
- ii. $\cos(S) =$ _____.
- iii. $\cos(Q) =$ _____.



3. Mr. Santowski is working through a triangle problem, but he doesn't always know when to use the sin key on his calculator and when to use the \sin^{-1} key. Please explain to Mr. S when he should use each key.

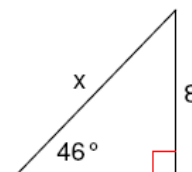
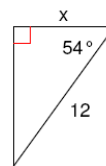
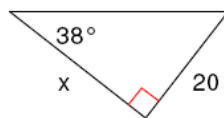
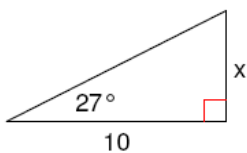
(2 marks)

4. Alas, poor Mr. S has encountered another problem with trigonometry. He typed $\sin^{-1}\left(\frac{10}{6}\right)$ on his calculator and got an error message (see screen image). Before Mr. S. throws his calculator away, explain to him **WHY** the calculator told him that there was an error.

(2 marks)

5. From the given diagrams of triangles, determine the length of the side labelled **x**.

(12 marks)



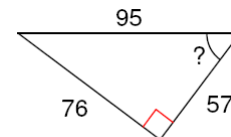
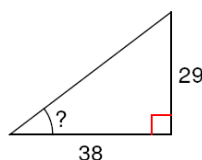
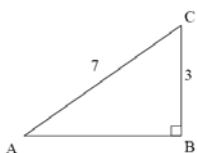
6. From the given diagrams of triangles, determine:

(9 marks)

(a) The measure of Angle A

(b) The measure of the indicated angle

(c) The measure of the indicated angle



7. Mr S is going to design a skateboard ramp that will connect the cafeteria to the swimming pool!!! (He has visions of skateboarding from the food court into the pool!!!!). He measures the height of the outside patio of the cafeteria to be 3.75 m above the pool.

(6 marks)

- (a) If he wants a ramp angle (or slope) of 22° , how long should his ramp be?



- (b) If the distance from the patio to the edge of the pool is 7.25 meters, can he build the ramp with an angle of 34° ?

8. Maria is flying a kite on the beach. She holds the end of the string 1.75 meters above ground level and determines the angle of elevation of the kite to be 61° . If the string is 22 meters long, how high is the kite above the ground to the *nearest meter*? NOTE: Your solution MUST have a diagram!!!!

(5 marks)

9. A tightrope walker attaches a cable to the roofs of two adjacent buildings that differ in height. The cable is 22 m long and the angle of depression from the top of the taller building to the top of the shorter building is 30° . **Draw a diagram!**

(7 marks)

- a. How far apart are the buildings?
b. What is the difference in the height of the buildings?

10. Mr S drew the following diagram of a triangle on the board and asked the class to solve for angle X and side Y . As soon as he drew it on the board, Sam told him that there was something wrong with the sides and angles in the triangle. Mr S, however, said that every was good in the triangle because it would be easy to solve for angle X and side Y .

(3 marks)

- (a) Who is correct?
(b) Explain how you determined who is correct.

