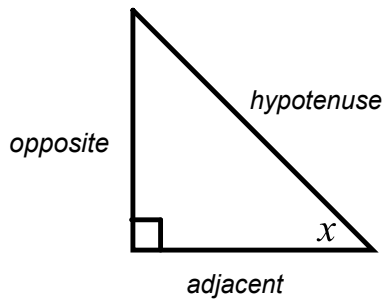


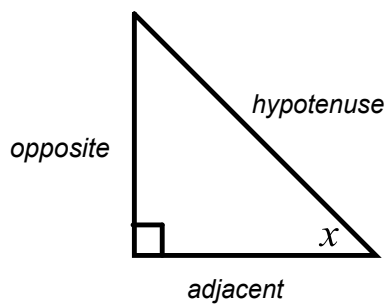
Section 2.4 The Sine and Cosine Ratios

Remember:



$$\tan x = \frac{\textit{opposite}}{\textit{adjacent}}$$

There are two more trigonometric ratios:



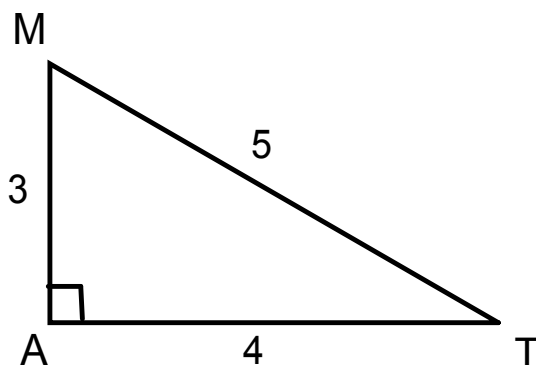
$$\sin x = \frac{\textit{opposite}}{\textit{hypotenuse}}$$

$$\cos x = \frac{\textit{adjacent}}{\textit{hypotenuse}}$$

Sine, cosine and tangent are known as the 3 primary trigonometric ratios.

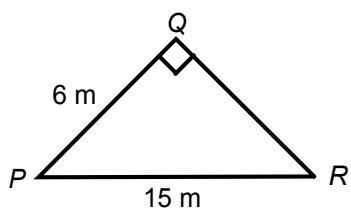
Example 1

In $\triangle MAT$ determine the ratio for $\sin M$ and $\cos M$.



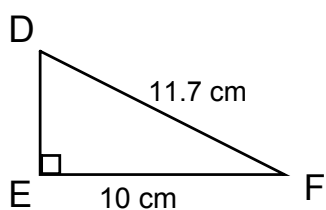
Example 2

In $\triangle PQR$ determine the measure of $\angle P$ and $\angle R$.



Example 3

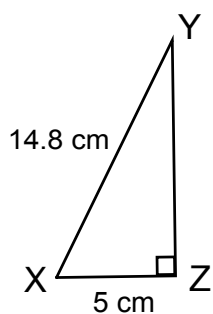
a) Determine the measure of $\angle D$ and $\angle F$.



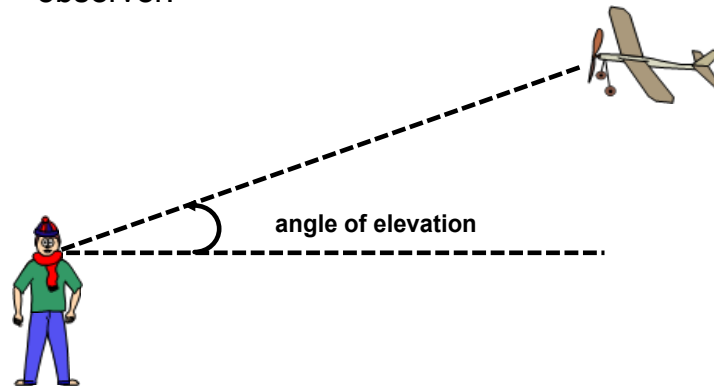
b) How can you decide which trigonometric ratio to use to calculate the measure of a missing angle?

Your Turn

c) Determine the measure of $\angle X$ and $\angle Y$.



Definition: The angle of elevation of an object above the horizontal is the angle between the horizontal and the line of sight from an observer.



Example 4

A pirate in his boat spots a treasure chest upon a cliff that is 100 m high. If the pirate is 250 m from the chest, determine the angle of elevation measured from the pirate.



Work Book Questions

p.95 - 96 #4ab(i), 6abcd, 7ab,
8ab, 9ab, 10a, 12, 14

Extra Practice Questions

p.95 - 96 #4ab(ii), 5ab, 7cd, 8cd,
9cd, 10bcd, 13