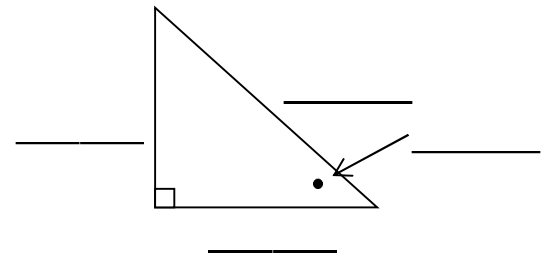
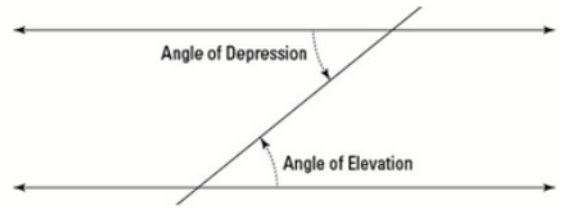


Trigonometry Essentials

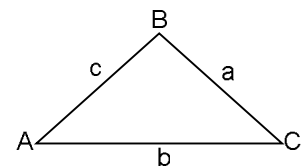
VOCABULARY ESSENTIALS

1. An angle of _____ is an angle that falls from the horizontal; also known as the angle of declination.
2. An angle of _____ rises from the horizontal; also known as the angle of inclination.
3. _____ is a symbol often used to represent a missing angle.
4. A _____ triangle has one 90° angle.
5. Any triangle that is not a right triangle is an _____ triangle.
6. An _____ triangle has three acute angles.
7. An _____ triangle has one obtuse angle.
8. A right angle is _____.
9. An acute angle is _____.
10. An obtuse angle is _____.
11. The sum of all the angles in a triangle is _____.
12. The _____ is the longest side in a right triangle, across from the right angle.
13. The side labelled _____ is across from the angle of focus in a right triangle.
14. The side labelled _____ is attached to the angle of focus in a right triangle.
15. The _____ is the angle given or the angle to be found in a right triangle.



TRIANGLE ESSENTIALS

16. To properly label a triangle, use small letters to represent the sides and capital letters to represent the angles.
17. The sides and angles opposite to each other should be labelled with the same letter.
18. In any triangle, the largest side is always across from the largest angle, the smallest side is always across from the smallest angle, and so on.
19. When a question says to solve a triangle, it means find every missing angle and every missing side.

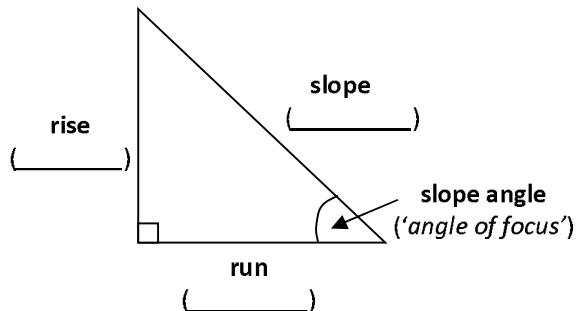


TRIGONOMETRY ESSENTIALS

20. Calculators must be in degree mode.
21. The opposite operations to \sin , \cos and \tan are \sin^{-1} , \cos^{-1} and \tan^{-1} .
22. When answering questions, round sides to 1 decimal, angles to a whole number and trig ratios to 4 decimals.

The Primary Trigonometric Ratios

The primary trigonometric ratios are used to find *side lengths* or *angle measures* in _____.



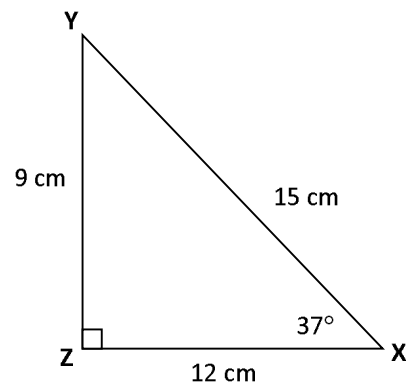
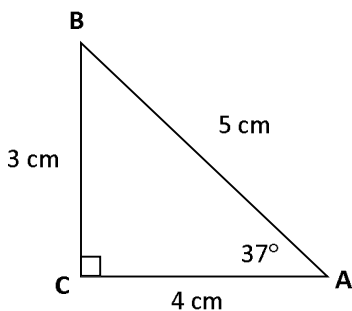
Slope Angle – the angle opposite to the rise and adjacent to the run; considered the angle of focus

Opposite Side – across from the slope angle

Adjacent Side – adjacent to the slope angle

Hypotenuse – the longest side of a right triangle across from the right angle

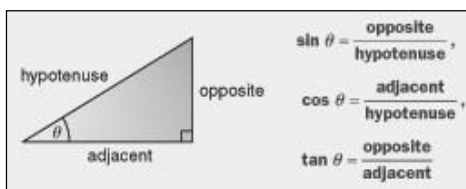
Complete the table below using the triangles provided. Round answers to a whole degree (no decimals).



Triangle	$\frac{\text{opposite}}{\text{hypotenuse}}$	$\sin A$	$\frac{\text{adjacent}}{\text{hypotenuse}}$	$\cos A$	$\frac{\text{opposite}}{\text{adjacent}}$	$\tan A$
$\triangle ABC$						
$\triangle XYZ$						

- What do you notice about the ratios of lengths of sides and the trigonometric ratios in both triangles?

What are the primary trigonometric ratios?



Trigonometric ratios can be used to calculate a side of a right triangle if _____ and _____ are known.

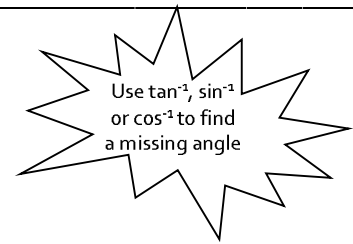
Example 1

<p>a.</p>	<p>b.</p>	<p>c.</p>

MBF 3C1

Name: _____

Trigonometric ratios can be used to calculate an angle of a right triangle if _____ are known.

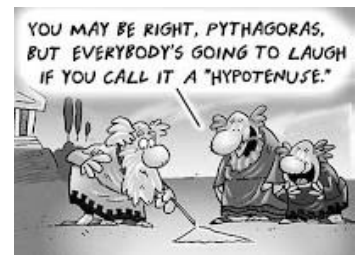


Example 2

<p>a.</p>	<p>b.</p>	<p>c.</p>

To apply the primary trig ratios:

1. draw a diagram if one is not provided
2. determine the _____ (the angle given or missing)
3. label the triangle with _____, _____, and _____
4. determine which _____ is to be used
5. solve for the missing _____ or _____



Example 3

A construction engineer determines that a straight road must rise vertically 45 m over a 250 m distance measured along the surface of the road (this represents the hypotenuse of the right triangle). Calculate the angle of elevation of the road.