Cheatography

Trigonometry Year 10 Cheat Sheet

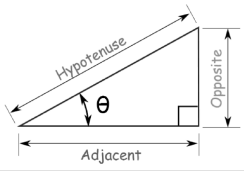
by enfoiree (enfoiree_) via cheatography.com/166759/cs/34910/

Trigonometric Functions

$\sin\theta = \frac{\text{Opposite}}{\text{Hypotenuse}}$

$\cos\theta = \frac{\text{Adjacent}}{\text{Hypotenuse}}$

$\tan\theta = \frac{\text{Opposite}}{\text{Adjacent}}$



*adjacent and opposite labels can change depending on the angle being found

Pythagoras Theorem

$c^2 = a^2 + b^2$	$c = \sqrt{a^2 + b^2}$
$a^2 = c^2 - b^2$	$a = \sqrt{c^2 - b^2}$
$b^2 = c^2 - a^2$	$b = \sqrt{c^2 - a^2}$

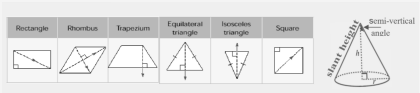
c is the hypotenuse whereas a and b can be switched interchangeably

Pythagoras in 3 Dimensions

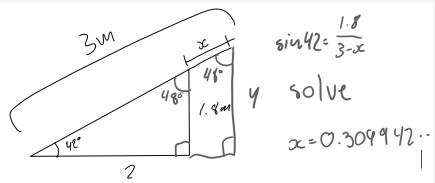
The Pythagorean Theorem can also be used in three dimensions to find the diagonal length of a rectangular prism

$$d = \sqrt{x^2 + y^2 + z^2}$$

Finding right angles in general shapes



Example X

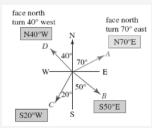


$\sin 42 = \frac{1.8}{3-x}$

solve

$x = 0.309942\ldots$

True Bearings



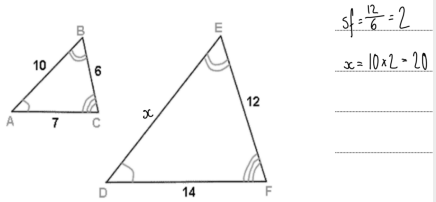
Similarity Test for Similar Triangles

Scale Factor

Scale factor is the ratio between the scale of a given original object and a new object, which is its representation but of a different size (bigger or smaller).

sf = larger figure dimensions ÷ smaller figure dimensions

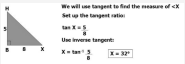
Example of Scale Factor



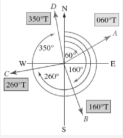
$sf = \frac{12}{6} = 2$

$x = 10 \times 2 = 20$

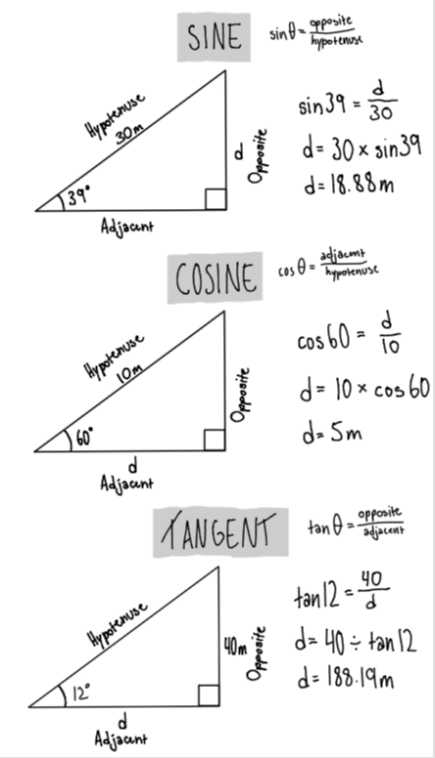
Example of Inverse



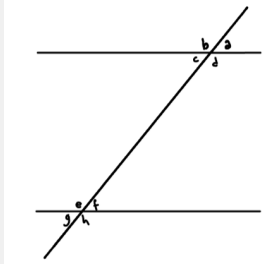
Conventional Bearings



Examples of Trigonometric functions



Examples of Angles



a = c = f = g
b = d = e = f

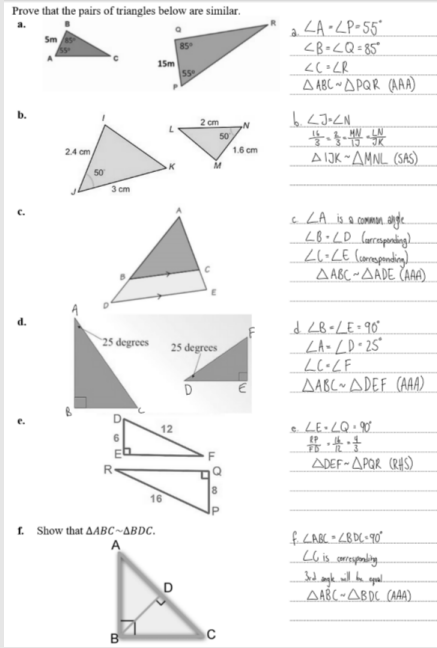
corresponding:
a & f
b & e
c & g
c & h

alternate:
d & e
c & f

Corresponding: Equal the same

Alternate: Equals 180

Examples of Similar Triangles



a. ∠A = ∠P = 55°
∠B = ∠Q = 85°
∠C = ∠R
△ABC ~ △PQR (AAA)

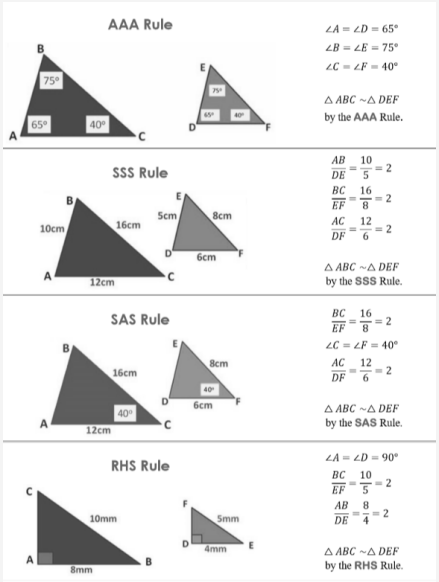
b. ∠J = ∠N
△IJK ~ △MNL (SAS)

c. ∠A is a common angle
∠B = ∠D (corresponding)
∠C = ∠E (corresponding)
△ABC ~ △ADE (AAA)

d. ∠B = ∠E = 90°
∠A = ∠D = 25°
∠C = ∠F
△ABC ~ △DEF (AAA)

e. ∠E = ∠Q = 90°
△DEF ~ △PQR (R&S)

f. ∠BAC = ∠BDC = 90°
∠C is corresponding
3rd angle will be equal
△ABC ~ △BDC (AAA)



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