

**REMEMBER TO ROUND THE DECIMALS!!!**

E.g. 1.27969 would round to 1.28

### Similarity and Congruence

#### Terms

Congruent Shapes	Similar shapes that have been moved in some way
Rotation	The shape has been turned over
Reflection	The shape has been flipped over as if it was reflected in a mirror
Translation	The shape keeps its same orientation, but it has been simply moved

### Radicals and Pythagoras

Pythagoras Theorem:  $a^2 + b^2 = c^2$

### Statistics

#### Types of Data

Categorical	A collection of information that is divided into groups.
Numerical	Data in the form of numbers.

#### Terms

Range	Biggest number - smallest number
Terms	Sum of all values divided by the number of values.
Median	The middle number of a numerical data set. If there are 2 medians use this formula: $(a+b) / 2$
Mean	Sum of all values divided by the number of values.
Mode	The number with the highest frequency (most occurring).

/ = divide

### Probability

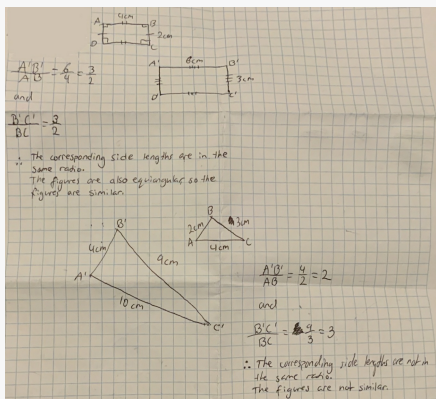
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Published 12th September, 2023.  
Last updated 12th September, 2023.  
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### Similarity and Congruence



$$\frac{A'B'}{AB}$$

$$\frac{B'C'}{BC}$$

### Coordinate Geometry

Distance  $d = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$   
 Formula:

Midpoint  $((x_1 + x_2) / 2, (y_1 + y_2) / 2)$   
 Formula:

Gradient  $y_2 - y_1 / x_2 - x_1$   
 Formula:

/ = fraction (divide)

### Distance Formula

Distance formula

$$d = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$$

$d$  = distance  
 $(x_1, y_1)$  = coordinates of the first point  
 $(x_2, y_2)$  = coordinates of the second point

### Midpoint Formula

The Midpoint Formula

$$M = \left( \frac{x_1 + x_2}{2}, \frac{y_1 + y_2}{2} \right)$$

Where:  
 $M$  = Midpoint  
 $x_1, y_1$  = x-coordinates  
 $x_2, y_2$  = y-coordinates

### Gradient Formula

Slope of a line

$$m = \frac{\text{rise}}{\text{run}} = \frac{y_2 - y_1}{x_2 - x_1}$$

$m$  = slope  
 $(x_1, y_1)$  = coordinates of first point in the line  
 $(x_2, y_2)$  = coordinates of second point in the line

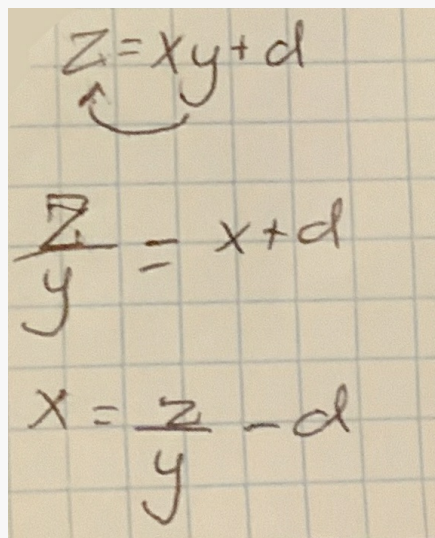
### Formulae

$$a = 10, b = 5, c = 15$$

Find  $d$  if  $d = ab + c$

$$d = 10 \times 5 + 15 = 65$$

### Formulae



### Trigonometry

Sine O/H

$\theta = \Delta$

Cosine A/H

Tangent O/A

When finding  $\theta$  (Delta) you use  $\text{Sin}^{-1}$ ,  $\text{Cos}^{-1}$  and  $\text{Tan}^{-1}$ . When you type it into the calculator press shift.

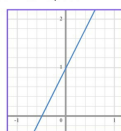
### Graphing Lines From Equations

$y = mx + c$  is the general equation of any straight line where  $m$  is the gradient of the line (how steep the line is) and  $c$  is the  $y$ -intercept (the point in which the line crosses the  $y$ -axis).  $y = mx + c$  is a linear equation.

E.g.

Let's look at the line  $y = 2x + 1$ .

This has a gradient of 2 and a  $y$ -intercept of 1, the coordinate (0, 1).



$$y = mx + c$$

### Measurement