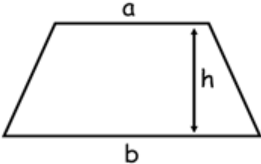
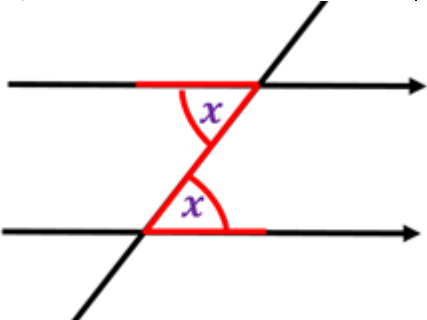
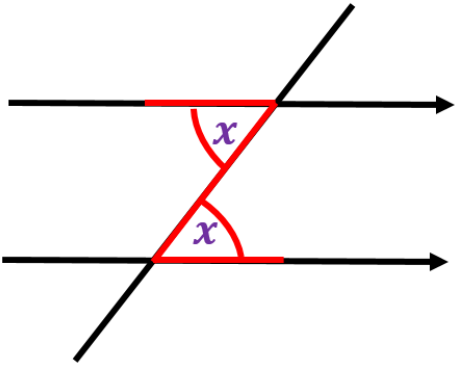
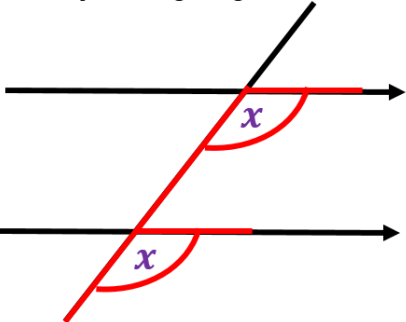
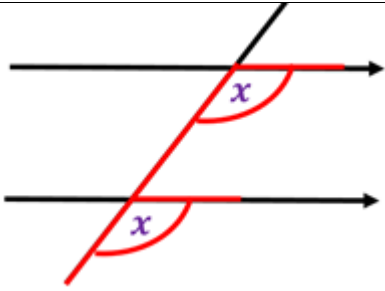


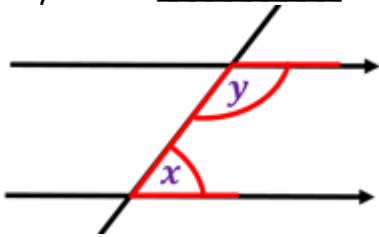
Year 9 & 10 - Maths Higher knowledge & answers

<p>1. What is the formula for the area of a triangle using sin?</p>	<p align="center"><b>Area = <math>\frac{1}{2} \times ab \sin C</math></b></p>
<p>2. Complete these index laws:</p> <p><math>a^m \times a^n =</math></p> <p><math>a^m \div a^n =</math></p> <p><math>(a^m)^n =</math></p>	<p align="center"> <math>a^m \times a^n = a^{m+n}</math>  <math>a^m \div a^n = a^{m-n}</math>  <math>(a^m)^n = a^{m \times n}</math> </p>
<p>3. What is the formula for the area of a circle?</p>	<p align="center"><b>Area = <math>\pi r^2</math></b></p>
<p>4. What is the formula for the area of a trapezium?</p> 	<p align="center"><b>Area = <math>\frac{1}{2} (a + b)h</math></b></p>
<p>5. What is the formula for the circumference of a circle?</p>	<p align="center"><b>Circumference = <math>\pi D</math></b></p>
<p>6. These angles are called _____ angles and they are _____.</p> 	<p align="center"><i>Alternate angles are equal</i></p> 
<p>7. These angles are called _____ angles and they are _____.</p>	<p align="center"><i>Corresponding angles are the same.</i></p> 

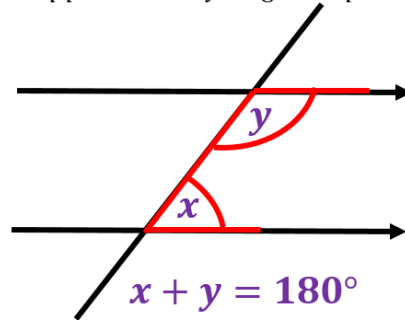
Year 9 & 10 - Maths Higher knowledge & answers



8. These angles are called \_\_\_\_\_ angles and they add to \_\_\_\_\_.



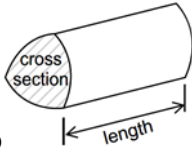
Supplementary angles equal to  $180^\circ$



9. What is Pythagoras' Theorem?

$$a^2 + b^2 = c^2$$

10. How do you find the volume of



a prism?

$$\text{Volume} = \text{area of cross-section} \times \text{length}$$

11. How do you calculate percentage change?

$$\text{Change} \div \text{original} \times 100$$

12. What is the formula for speed?

$$\text{speed} = \frac{\text{distance}}{\text{time}}$$

13. What is the formula for density?

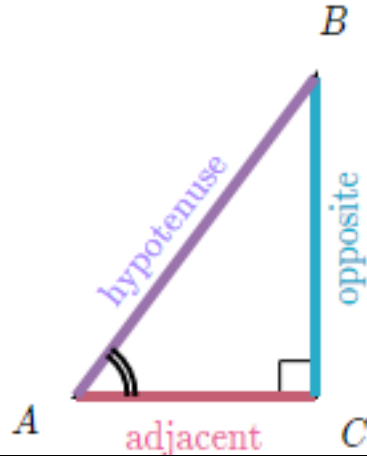
$$\text{Density} = \frac{\text{mass}}{\text{volume}}$$

14. What is the formula to solve the quadratic  $ax^2 + bx + c = 0$

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

Year 9 & 10 - Maths Higher knowledge & answers

15. What are the TRIGONOMETRY formula triangles?



$$\sin(A) = \frac{\text{opposite}}{\text{hypotenuse}}$$

$$\cos(A) = \frac{\text{adjacent}}{\text{hypotenuse}}$$

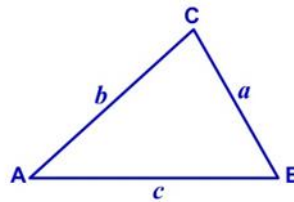
$$\tan(A) = \frac{\text{opposite}}{\text{adjacent}}$$

16. What's the rule to evaluate a negative indice?

$$x^{-a}$$

$$\frac{1}{x^a}$$

17. What is the COSINE rule for finding a side?

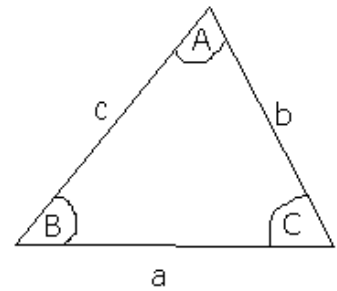


In any triangle  $ABC$   $a^2 = b^2 + c^2 - 2bc \cos A$

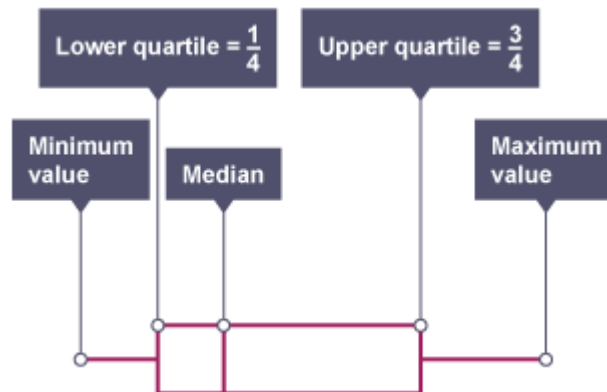
18. What is the Sine rule?

**The sine rule is an important rule relating the sides and angles of any triangle.**

$$\frac{a}{\sin A} = \frac{b}{\sin B} = \frac{c}{\sin C}$$




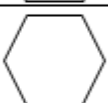
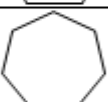
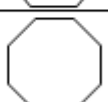
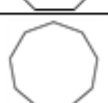
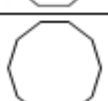





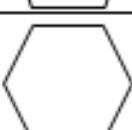
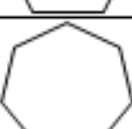
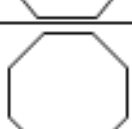
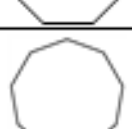
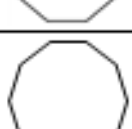
19. Label the parts of this box plot.



**Year 9 & 10 - Maths Higher knowledge & answers**

20. Write the name, interior angle & sum of interior angles for each shape.

Picture of Polygon









Number of Sides	Name of Polygon	Picture of Polygon	Interior angle of a regular polygon	Sum of the interior Angles
3	Triangle		$60^\circ$	$180^\circ$
4	Quadrilateral		$90^\circ$	$360^\circ$
5	Pentagon		$108^\circ$	$540^\circ$
6	Hexagon		$120^\circ$	$720^\circ$
7	Heptagon		$128.6^\circ$	$900^\circ$
8	Octagon		$135^\circ$	$1080^\circ$
9	Nonagon		$140^\circ$	$1260^\circ$
10	Decagon		$144^\circ$	$1440^\circ$