

Name:

Form:

MATHS FUNDAMENTAL KNOWLEDGE QUIZ BOOKLET

Foundation



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Unit 1:Types of Number

Question/Definition	Answer
1. Name given for whole numbers including zeros	Integer
2. Ordering smallest to largest.	Ascending
3. Ordering largest to smallest.	Descending
4. The number or expression above the vinculum in a fraction.	Numerator
5. The number or expression below the vinculum in a fraction.	Denominator
8. The result of multiplying a number by itself.	Square Number
7. A number that only has two distinct factors, 1 and itself.	Prime
8. List first 10 square numbers.	1, 4, 9, 16, 25, 36, 49, 64, 81, 100
9. List first 10 prime numbers.	2, 3, 5, 7, 11, 13, 17, 19, 23, 29
10. List first triangular numbers.	0, 1, 3, 6, 10, 15, 21, 28, 36, 45

Unit 2: Properties of 2D Shapes

Question/Definition	Answer
1. A plane shape (two-dimensional, flat) with at least 3 straight sides and angles.	Polygon
2. A triangle of equal side lengths and angles.	Equilateral
3. A triangle or trapezium having two sides of equal length.	Isosceles
4. A triangle where all sides and angles are unequal.	Scale
5. A quadrilateral with two pairs of parallel sides and opposite sides equal length.	Parallelogram
6. A two-dimensional shape with four sides.	Quadrilateral
7. A shape having all sides of equal length.	Regular
8. The total distance around the outside of a closed 2D shape.	Perimeter
9. The name given to a shape with 5 sides.	Pentagon
10. The name given to a shape with 6 sides.	Hexagon
11. The name given to a shape with 7 sides.	Heptagon
12. The name given to a shape with 8 sides.	Octagon

Unit 3: Area and Angles

Definition/Question	Answer
1. Angles on a straight-line sum to	180
2. Angles in a triangle sum to	180
3. Angles around a point sum to	360
4. Angles in a quadrilateral sum to	360
5. Formula for calculating exterior angle of a polygon	$360 \div \text{no. of sides}$
6. Formula for calculating interior angle of a polygon	$180 - \text{exterior angle}$
7. Formula for calculating sum of angles in a polygon	$(n - 2) \times 180$
8. Formula for calculating area of rectangle or parallelogram	$\text{base} \times \text{height}$
9. Formula for calculating area of a triangle.	$\frac{\text{base} \times \text{height}}{2}$
10. Formula for calculating area of a trapezium.	$\frac{1}{2}(a + b) \times h$



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Unit 4: Properties of Circles

Calculate

Formula

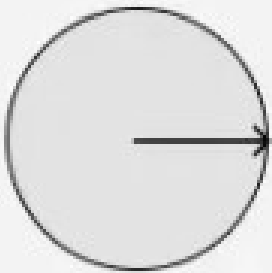
1. Area of circle.

$$\pi \times r^2$$

2. Circumference of Circle.

$$\pi \times d$$

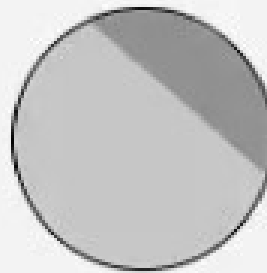
1. RADIUS



2. SECTOR



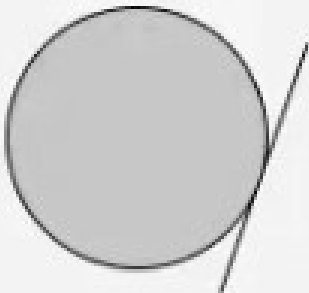
3. SEGMENT



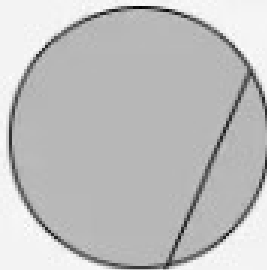
4. ARC



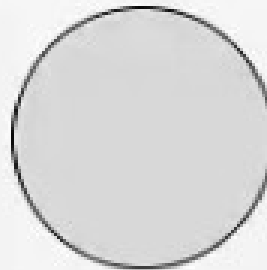
5. TANGENT



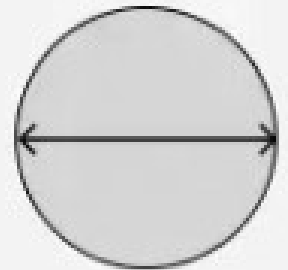
6. CHORD



7. CIRCUMFERENCE



8. DIAMETER



Unit 5: Properties of 3D Shapes

Question/Definition	Answer
1. A single flat surface of a 3D shape.	Face
2. The line segment that connects faces.	Edges
3. The corner of a 3D shape.	Vertices
4. A measurement of the 3D space occupied by a solid, liquid or gas.	Volume
5. Formula for Volume of a prism.	Area of cross section x length
6. Formula for Volume of a cylinder.	$\pi \times r^2 \times h$
7. I have 6 faces, 12 edges, 8 vertices.	Cube or Cuboid
8. I have 5 faces, 9 edges, 6 vertices.	Triangular prism
9. I have 3 faces, 2 edges and 0 vertices.	Cylinder
10. I have 2 faces, 1 edge, 1 vertex.	Cone

Unit 6: Probability

Definition/Question	Answer
1. The probabilities of all possible outcomes of an event always add up to	1 or 100%
2. How do we represent probabilities?	Fraction or Decimal
3. What is the estimated probability of an event happening called?	Relative frequency
4. How do you calculate the relative frequency of an event?	$\frac{\text{Number of times the event happened}}{\text{Total number of trials}}$
5. How can you improve the accuracy of an estimated probability?	Increase the number of trials
6. What should each branch in a tree diagram sum to?	1
7. How do you calculate the probability across branches in a tree diagram?	Multiply the probabilities
8. What does $A \cup B$ mean?	A or B
9. What does $A \cap B$ mean?	A and B, the intersection of the Venn diagram
10. What does A' mean?	The complement of A, not A.

Unit 7: Graphs

Question/Definition

Answer

1. The order of co-ordinates.

(x, y)

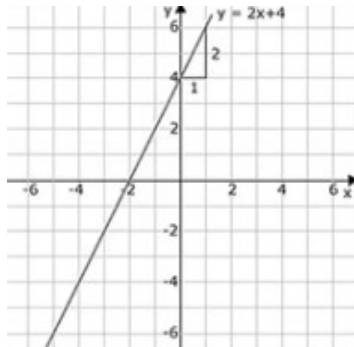
2. The equation for a straight line.

$y = mx + c$

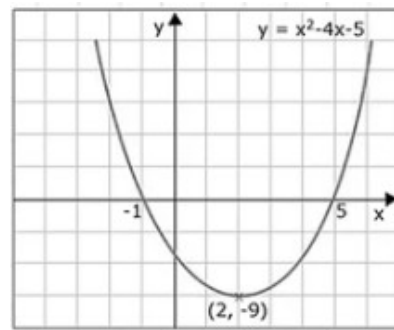
3. Method to calculate the gradient of a straight-line graph.

$\frac{y_2 - y_1}{x_2 - x_1}$

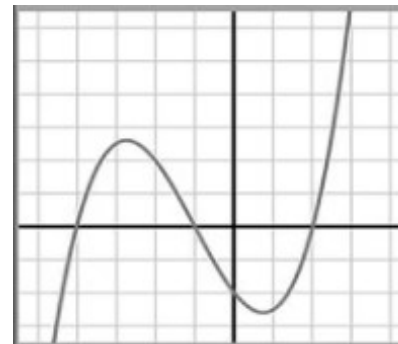
4. Name the type of graph



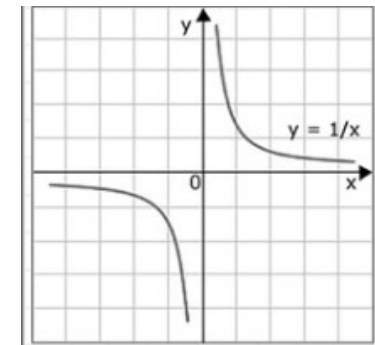
Linear Graph



Quadratic Graph



Cubic Graph



Reciprocal Graph

5. Where a linear graph crosses the y-axis.

Y-intercept

6. How steep a line is.

Gradient