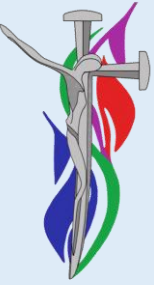


# Maths- Revision



## Personalised Learning Checklist

### Higher Paper 1

Name:

Class:

Question	Topic	Total Mark	My Mark
1	Find the LCM	2	2
2	Complete a probability table	3	3
3	Find the nth term of an arithmetic sequence	2	2
4	Problem involving fractions	4	4
5a	Expand a pair of brackets	2	2
5b	Simplify an expression involving indices	2	2
6a	Write a number in standard form as an ordinary number	1	1
6b	Write an ordinary number in standard form	1	1
6c	Proof involving standard form	2	2
7	Problem involving ratio, percentages and fractions	4	1
8	Problem involving perimeter	4	0
9a	State the value of the cosine of an angle	1	1
9b	Work out the length of the side of a triangle	2	0
10	Describe a transformation	2	1
11a	Estimate the square root of a number	1	0
11b	State whether the answer to a is an under or overestimate	1	1
12	State why a given statement is incorrect	1	0
13a	Complete a table of values (quadratic)	2	2
13b	Draw curve from a table of values	2	1
13c	Use a graph to find the solution to an equation	2	0
14	Proof involving algebraic fractions and division	4	2
15	Algebraic problem involving direct proportion	3	3
16	Proof involving writing a recurring decimal as a fraction	2	2
17	Find a term in a quadratic sequence	4	0
18	Write the probability of combined events as an algebraic expression	1	0
19i	Interpret a histogram	3	0
19ii	Interpret a histogram	1	0
20	Find the area of a triangle	4	0
21a	Write the square root of a number as a surd	2	2
21b	Rationalise the denominator if an expression	3	3
22	Solve equation involving indices	3	3
23	Interpret a Venn diagram	5	0
24	Proof involving circles, squares, rectangles and area	4	1
Total:		80	42

## First Class Maths

HOME REVISION EXAM PAPERS SPICY QUESTIONS					
The Ultimate Foundation Revision Booklet		The Ultimate Higher Revision Booklet			
Topic	Video Explanation	Exam Questions	Solutions	Grade	Past Series Appearance*
Algebraic Fractions (Equations)				8+	64%
Algebraic Fractions (Simplifying)				8+	91%
Algebraic Proof				8+	73%
Circle Theorem Proofs				8+	9%
Completing the Square (Tricky ones)				8+	64%
Equation of a Tangent to a Circle				8+	45%
Non-linear Simultaneous Equations				8+	36%
Quadratic Inequalities				8+	73%
Rationalise the Denominator				8+	82%
Speed Time Graphs				8+	64%
Transformations of Graphs				8+	82%
Vectors (Higher)				8+	91%
3D Trig and Pythagoras				7+	64%
Algebraic Fractions (Operations)				7+	91%
Area of a Triangle (Using Trig)				7+	82%
Calculating with Surds				7+	45%
Circle Theorems				7+	100%
Completing the Square				7+	64%
Composite Functions				7+	91%
Conditional Probability				7+	82%

## Maths Genie

### Grade 4

Videos	Exam Questions	Exam Questions Booklet	Solutions
Compound Interest and Depreciation	<a href="#">Exam Questions</a>	Compound Interest and Depreciation	<a href="#">Solutions</a>
Indices	<a href="#">Exam Questions</a>	Indices	<a href="#">Solutions</a>
Prime Factors, HCF and LCM	<a href="#">Exam Questions</a>	HCF, LCM	<a href="#">Solutions</a>
Real Life and Distance Time Graphs		Real Life Graphs	<a href="#">Solutions</a>
Inequalities	<a href="#">Exam Questions</a>	Inequalities	<a href="#">Solutions</a>
Forming and Solving Equations	<a href="#">Exam Questions</a>	Forming and Solving Equations	<a href="#">Solutions</a>
Sequences (Nth Term)	<a href="#">Exam Questions</a>	Sequences (nth term)	<a href="#">Solutions</a>
Expanding and Factorising	<a href="#">Exam Questions</a>	Expand and Factorise	<a href="#">Solutions</a>
Pythagoras	<a href="#">Exam Questions</a>	Pythagoras	<a href="#">Solutions</a>
Angles in Parallel Lines	<a href="#">Exam Questions</a>	Angles in Parallel Lines	<a href="#">Solutions</a>
Angles in Polygons	<a href="#">Exam Questions</a>	Angles in Polygons	<a href="#">Solutions</a>
Surface Area	<a href="#">Exam Questions</a>	Surface Area	<a href="#">Solutions</a>
Volume of a Prism	<a href="#">Exam Questions</a>	Volume of Prisms	<a href="#">Solutions</a>
Cylinders	<a href="#">Exam Questions</a>	Volume and Surface Area of Cylinders	<a href="#">Solutions</a>
Loci and Construction		Loci and Construction	<a href="#">Solutions</a>
Bearings		Bearings	<a href="#">Solutions</a>
Plans and Elevations	<a href="#">Exam Questions</a>	Plans and Elevations	<a href="#">Solutions</a>
Averages from Frequency Tables	<a href="#">Exam Questions</a>	Averages from Frequency Tables	<a href="#">Solutions</a>
Probability	<a href="#">Exam Questions</a>	Probability and Relative Frequency	<a href="#">Solutions</a>
Scatter Graphs		Scatter Graphs	<a href="#">Solutions</a>



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# Maths Genie



## Grade 5

Videos	Exam Questions	Exam Questions Booklet	Solutions
<a href="#">Writing a Ratio as a Fraction or Linear Function</a>	<a href="#">Exam Questions</a>	<a href="#">Ratio Fraction Problems</a>	<a href="#">Solutions</a>
	<a href="#">Exam Questions</a>	<a href="#">Ratio Problems 2</a>	<a href="#">Solutions</a>
<a href="#">Direct and Inverse Proportion</a>	<a href="#">Exam Questions</a>	<a href="#">Direct and Inverse Proportion</a>	<a href="#">Solutions</a>
<a href="#">Reverse Percentages</a>	<a href="#">Exam Questions</a>	<a href="#">Reverse Percentages</a>	<a href="#">Solutions</a>
<a href="#">Standard Form</a>	<a href="#">Exam Questions</a>	<a href="#">Standard Form</a>	<a href="#">Solutions</a>
<a href="#">Speed and Density</a>	<a href="#">Exam Questions</a>	<a href="#">Compound Measures</a>	<a href="#">Solutions</a>
<a href="#">Changing the Subject of a Formula</a>	<a href="#">Exam Questions</a>	<a href="#">Changing the Subject of a Formula</a>	<a href="#">Solutions</a>
<a href="#">Expanding and Factorising Quadratics</a>	<a href="#">Exam Questions</a>	<a href="#">Expanding and Factorising Quadratics</a>	<a href="#">Solutions</a>
<a href="#">Solving Quadratics</a>	<a href="#">Exam Questions</a>	<a href="#">Solving Quadratics</a>	<a href="#">Solutions</a>
<a href="#">Drawing Quadratic Graphs</a>	<a href="#">Quadratic Graphs</a>	<a href="#">Quadratic Graphs</a>	<a href="#">Solutions</a>
<a href="#">Drawing Other Graphs: Cubic/Reciprocal</a>		<a href="#">Cubic/Reciprocal Graphs</a>	<a href="#">Solutions</a>
<a href="#">Simultaneous Equations</a>	<a href="#">Exam Questions</a>	<a href="#">Simultaneous Equations</a>	<a href="#">Solutions</a>
<a href="#">Solving Simultaneous Equations Graphically</a>	<a href="#">Exam Questions</a>	<a href="#">Solving Simultaneous Equations Graphically</a>	<a href="#">Solutions</a>
<a href="#">Midpoint of a Line Segment</a>			
<a href="#">Gradient of a Line</a>	<a href="#">Exam Questions</a>	<a href="#">Gradient of a Line</a>	<a href="#">Solutions</a>
<a href="#">Equation of a Line</a>	<a href="#">Exam Questions</a>	<a href="#">Equation of a Line</a>	<a href="#">Solutions</a>
<a href="#">Spheres and Cones</a>	<a href="#">Exam Questions</a>	<a href="#">Spheres and Cones</a>	<a href="#">Solutions</a>
<a href="#">Sector Areas and Arc Lengths</a>	<a href="#">Exam Questions</a>	<a href="#">Sectors and Arcs</a>	<a href="#">Solutions</a>
<a href="#">Similar Shapes (Lengths)</a>	<a href="#">Exam Questions</a>	<a href="#">Similar Shapes (Lengths)</a>	<a href="#">Solutions</a>
<a href="#">SOHCAHTOA (Trigonometry)</a>	<a href="#">Exam Questions</a>	<a href="#">SOHCAHTOA</a>	<a href="#">Solutions</a>
<a href="#">Exact trig values</a>	<a href="#">Exam Questions</a>	<a href="#">Exact trig values</a>	<a href="#">Solutions</a>
<a href="#">Vectors</a>		<a href="#">Vectors</a>	<a href="#">Solutions</a>
<a href="#">Probability Trees</a>	<a href="#">Exam Questions</a>	<a href="#">Probability Trees</a>	<a href="#">Solutions</a>
<a href="#">Venn Diagrams</a>	<a href="#">Exam Questions</a>	<a href="#">Venn Diagrams</a>	<a href="#">Solutions</a>



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## Similar Shapes (Lengths)



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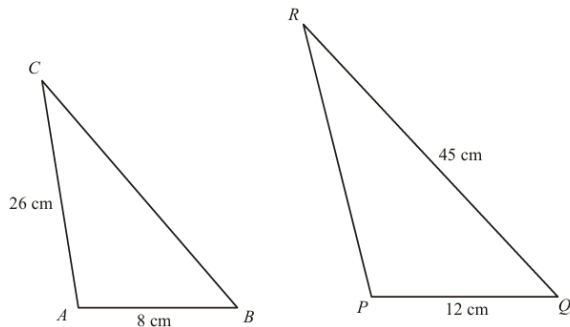
## Grade 5

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<a href="#">Writing a Ratio as a Fraction or Linear Function</a>	<a href="#">Exam Questions</a>	<a href="#">Ratio Fraction Problems</a>	<a href="#">Solutions</a>
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# Exam Questions

4



The two triangles ABC and PQR are mathematically similar.

Angle A = angle P.

Angle B = angle Q.

AB = 8 cm.

AC = 26 cm.

PQ = 12 cm.

QR = 45 cm.

- (a) Calculate the length of  $PR$ .

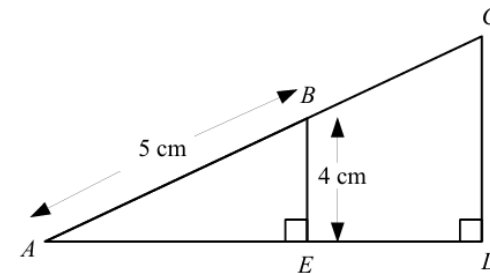
\_\_\_\_\_ cm  
(2)

- (b) Calculate the length of  $BC$ .

\_\_\_\_\_ cm  
(2)

(Total for Question 4 is 4 marks)

6



$AB:AC = 1:3$

- (a) Calculate the length of  $CD$ .

\_\_\_\_\_ cm  
(2)

- (b) Calculate the length of  $BC$ .

\_\_\_\_\_ cm  
(2)

(Total for Question 6 is 4 marks)

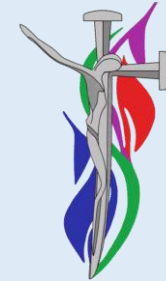


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# Worked Solutions

4

The two triangles ABC and PQR are mathematically similar.  
Angle A = angle P.  
Angle B = angle Q.  
AB = 8 cm.  
AC = 26 cm.  
PQ = 12 cm.  
QR = 45 cm.

Scale factor =  $\frac{12}{8} = \frac{3}{2}$

(a) Calculate the length of PR.

$$26 \times \frac{3}{2} = \underline{39}$$

\_\_\_\_\_ cm  
(2)

(b) Calculate the length of BC.

$$45 \div \frac{3}{2}$$
$$45 \times \frac{2}{3} = \underline{30}$$

\_\_\_\_\_ cm  
(2)

(Total for Question 4 is 4 marks)

6

AB: AC = 1: 3  
AC = 15 cm

(a) Calculate the length of CD.

Scale factor =  $\frac{15}{5} = 3$

$$4 \times 3 = \underline{12}$$

\_\_\_\_\_ cm  
(2)

(b) Calculate the length of BC.

$$15 - 5 = \underline{10}$$

\_\_\_\_\_ cm  
(2)

(Total for Question 6 is 4 marks)