

Mid-Year 10 Review – additional questions.

The total mark is [50]

The following Questions are ALL non-calculator and have been selected from past GCSE examination papers.

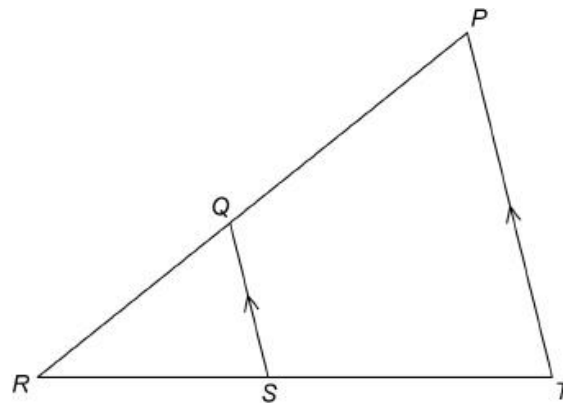
They are in roughly the same order as the topics on your Mid-Year 10 Exam Review sheet. Attempt first those which you have identified as needing to revise and then the rest.

Use your notes to help you and if you needed a key facts or process add it to the list of things you need to learn.

Geometry	
Angles in Polygons	<input type="checkbox"/>
Angle facts - for triangles, quadrilaterals and parallel lines	<input type="checkbox"/>
Area of a 2D shape including circles and fractions of a circle.	<input type="checkbox"/>
Congruence & similarity	<input type="checkbox"/>
Pythagoras	<input type="checkbox"/>
SOH CAH TOA	<input type="checkbox"/>
Transformations - translation, rotation, reflection, enlargement	<input type="checkbox"/>
Volume of a prism	<input type="checkbox"/>
Data Handling	
Histograms	<input type="checkbox"/>
mean, median, mode and range	<input type="checkbox"/>
Representing data - pie charts, bar charts	<input type="checkbox"/>
Number	
$+$ - \times \div with decimals, negatives, fractions & mixed numbers	<input type="checkbox"/>
Factors	<input type="checkbox"/>
FDP conversion	<input type="checkbox"/>
Powers & roots	<input type="checkbox"/>
Percentages	<input type="checkbox"/>
repeating decimals	<input type="checkbox"/>
rounding	<input type="checkbox"/>
surds	<input type="checkbox"/>
Algebra	
algebraic fractions	<input type="checkbox"/>
algebraic notation	<input type="checkbox"/>
Equations - linear	<input type="checkbox"/>
expanding & factorising	<input type="checkbox"/>
expressions - simplifying	<input type="checkbox"/>
Indices	<input type="checkbox"/>
Sequences - linear	<input type="checkbox"/>
Simultaneous equations	<input type="checkbox"/>
Ratio & Proportion	
percentage change	<input type="checkbox"/>
ratio	<input type="checkbox"/>

Q1.

PRT and *QRS* are similar triangles.



Not drawn accurately

Which of these is equivalent to $\frac{QR}{PR}$?

Circle your answer.

$$\frac{RS}{ST}$$

$$\frac{QS}{PT}$$

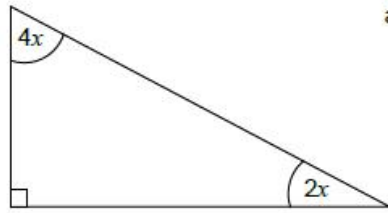
$$\frac{PT}{QS}$$

$$\frac{RT}{RS}$$

(Total 1 mark)

Q2.

Work out the value of x .

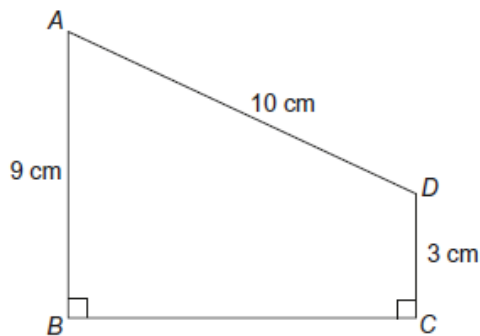


Not drawn accurately

Answer _____ degrees
(Total 3 marks)

Q3.

$ABCD$ is a trapezium.



Not drawn accurately

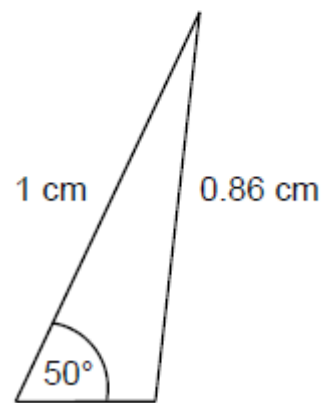
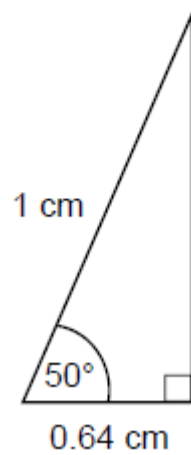
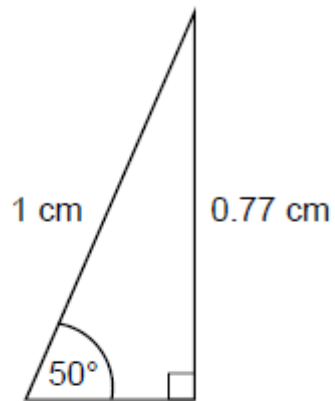
Work out the length of BC .
You **must** show your working.

Answer _____ cm
(Total 4 marks)

Q4.

Here are sketches of four triangles.

Not drawn accurately



In each triangle
the longest side is **exactly** 1 cm
the other length is given to 2 decimal places.

- (a) Circle the value of $\cos 50^\circ$ to 2 decimal places.

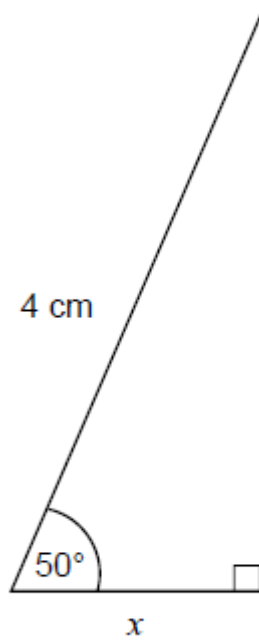
0.77 0.53 0.64 0.86

(1)

(b) Work out the value of x .

Give your answer to 1 decimal place.

Not drawn accurately

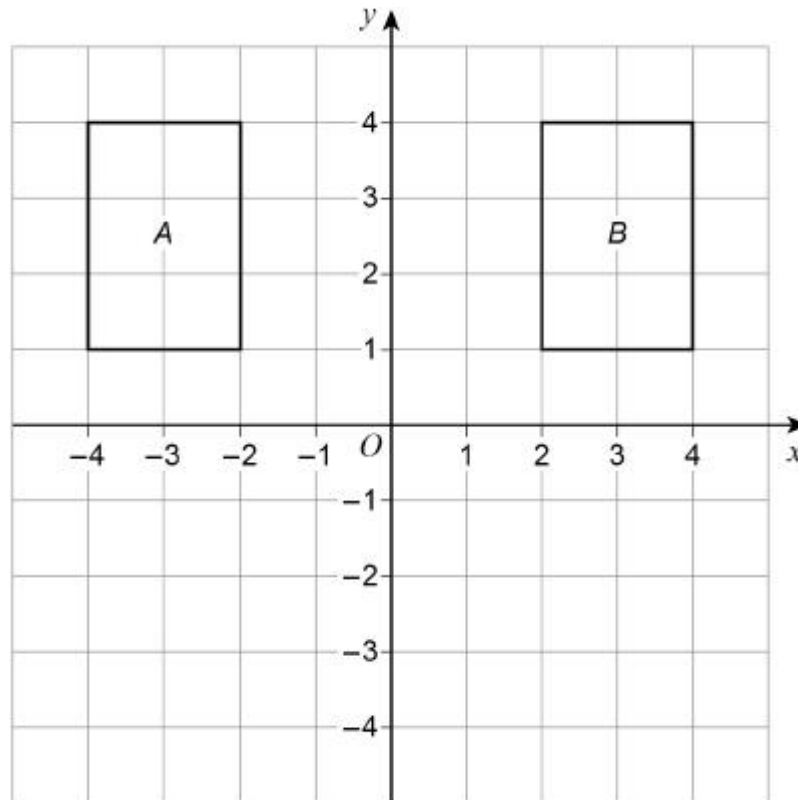


Answer _____ cm

(2)
(Total 3 marks)

Q5.

(a) The diagram shows rectangles A and B.



Rectangle A can be mapped to rectangle B by a **single** transformation.

Javed says,

“The **only** single transformation is a reflection in the y-axis because the rectangles are on opposite sides of the y-axis.”

Is he correct?

Tick a box.

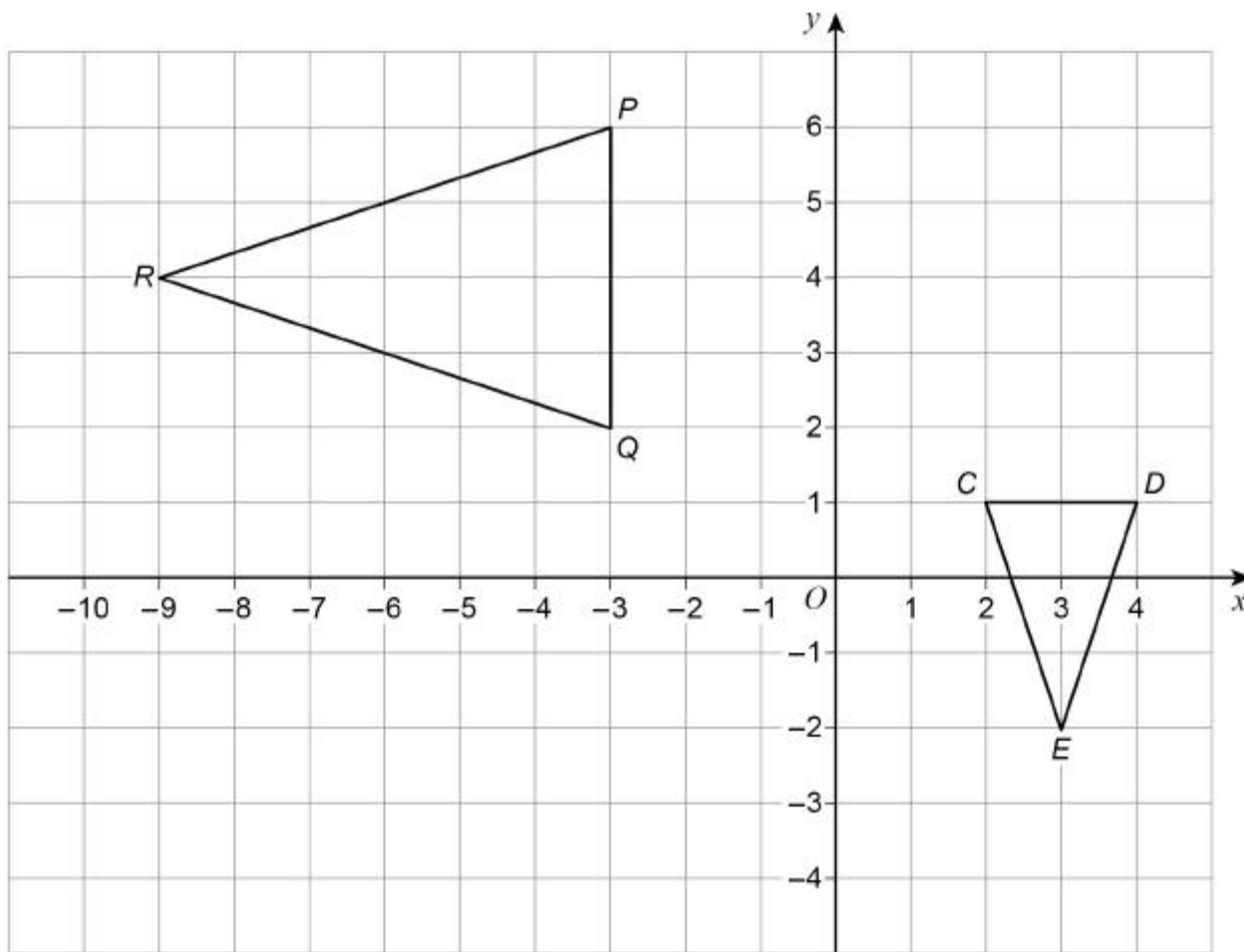
Yes

No

Give a reason for your answer.

(1)

(b) This diagram shows triangles CDE and PQR .



CDE is mapped to PQR by combining two single transformations.

The first is a rotation of 90° anticlockwise about E .

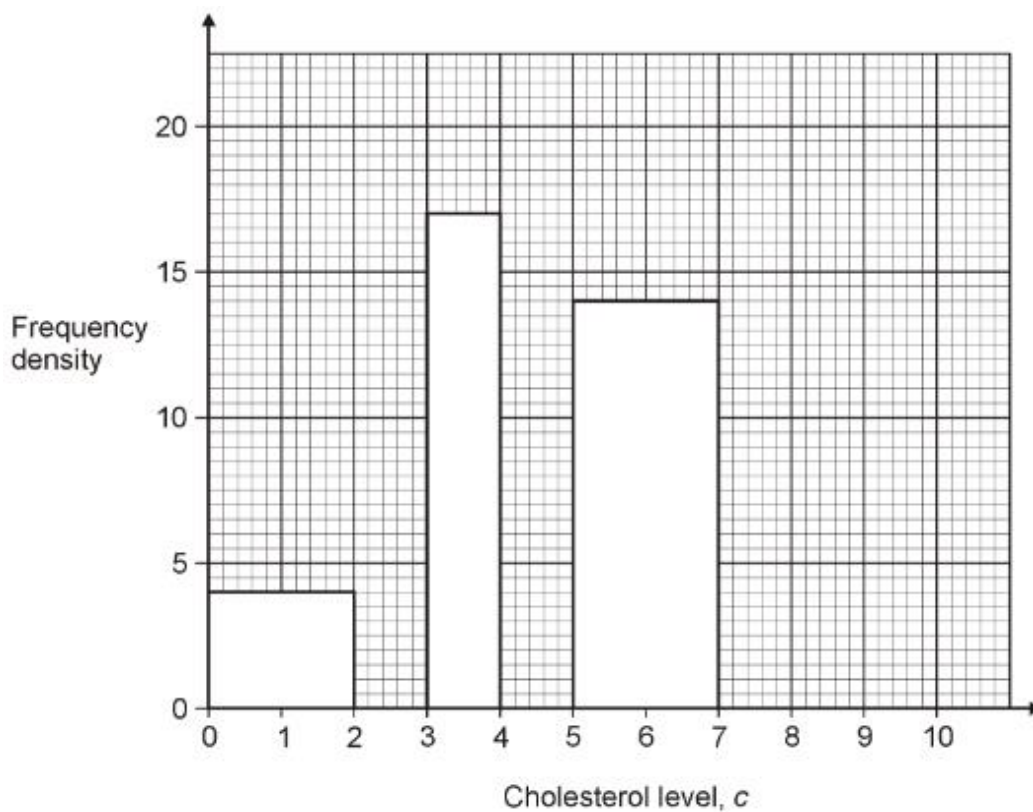
Describe fully the second transformation.

(3)
(Total 4 mark)

Q6.

The table and histogram show some information about the cholesterol level in the blood of 100 hospital patients.

Cholesterol level, c	Frequency
$0 < c \leq 2$	8
$2 < c \leq 3$	13
$3 < c \leq 4$	
$4 < c \leq 5$	19
$5 < c \leq 7$	
$7 < c \leq 10$	15



(a) Use the table to complete the histogram.

(2)

(b) Use the histogram to complete the table.

(2)

(Total 4 marks)

Q7.

(a) Work out the value of $3^3 + 4^2$

Answer _____

(2)

(b) Work out $5^3 - 10^2$

Give your answer as a power of 5.

Answer _____

(3)

(Total 5 marks)

Q8.

In a sale, a TV is reduced in price by 20%.
The sale price is £280.
After the sale, the price goes back to the original price.
Matt has £340 to spend.

Can he afford the TV when it goes back to its original price?

(Total 3 marks)

Q9.

Rationalise the denominator and simplify $\frac{10}{3\sqrt{5}}$

Answer _____

(Total 2 marks)

Q12.

Write $\frac{4}{x-2} - \frac{3}{x}$ as a single fraction.

Answer _____

(Total 3 marks)

Q13.

(a) Solve $x + 12 = 29$

$x =$ _____

(1)

(b) Solve $0.5y = 20$

$y =$ _____

(1)

(Total 2 marks)

Q14.

Circle the expression that can be written as $2y^2$

$(2y)^2$

$2 \times 2 \times y$

$2 \times y \times y$

$2 \times 2 \times y \times y$

(Total 1 mark)

Q15.

Solve $7x - 9 = 3x + 23$

$x =$ _____

(Total 3 marks)

Q16.

Expand and simplify $3(2x + 5) - 2(x - 4)$

Answer _____

(Total 3 marks)

Q17.

Expand $3x^2(2x - 5)$

Circle your answer.

$-9x$

$6x^3 - 5$

$5x^3 - 8x^2$

$6x^3 - 15x^2$

(Total 1 mark)

Q18.

$2x + 3y = 15.5$

$x + y = 6$

Work out the values of x and y .

$x = \underline{\hspace{10em}}$

$y = \underline{\hspace{10em}}$

(Total 3 marks)