



GORDONSTOUN MATHS TEST FOR 15+

NAME

1 a Simplify $x^4 \times x^7$

(1 mark)

b Simplify $y^{20} \div y^4$

(1 mark)

c Simplify $(3xy^2)^3$

(2 marks)

- 2 Annie, Bea and Clare share £600.
Annie receives £60 more than Bea.
The ratio of Bea's share to Clare's share is 3 : 4
How much does each girl receive?

(4 marks)

- 3 Factorise

a $y^2 - 49$

(1 mark)



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b $m^2 - 11m - 60$

(2 marks)

4 y is inversely proportional to x .

When $x = 15$, $y = 0.6$

a Work out an equation connecting y and x .

(3 marks)

b Work out the value of y when $x = 0.4$

5 The diagram shows triangle ABC.

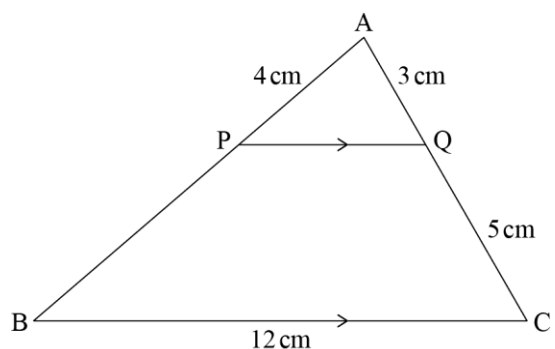
Points P and Q lie on AB and AC, such that

PQ is parallel to BC.

AP = 4cm, AQ = 3cm,

QC = 5cm and BC = 12cm.

(1 mark)





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a Explain why triangle APQ is similar to triangle ABC.

(2 marks)

b Work out the length of PQ.

(2 marks)

c Work out the length of PB.

(2 marks)

6 Match each equation to a graph.

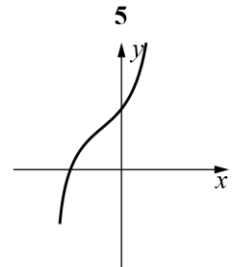
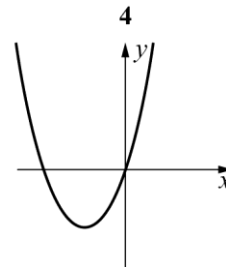
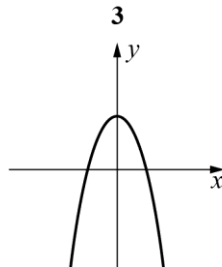
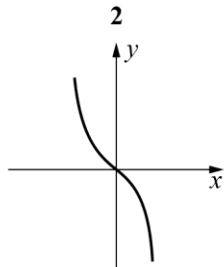
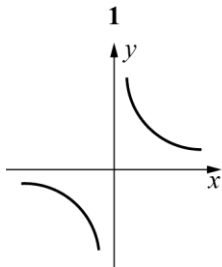
A $y = x^3 + 1$

B $y = \frac{2}{x}$

C $y = 4 - x^2$

D $y = -x^3$

E $y = x^2 + 7x$

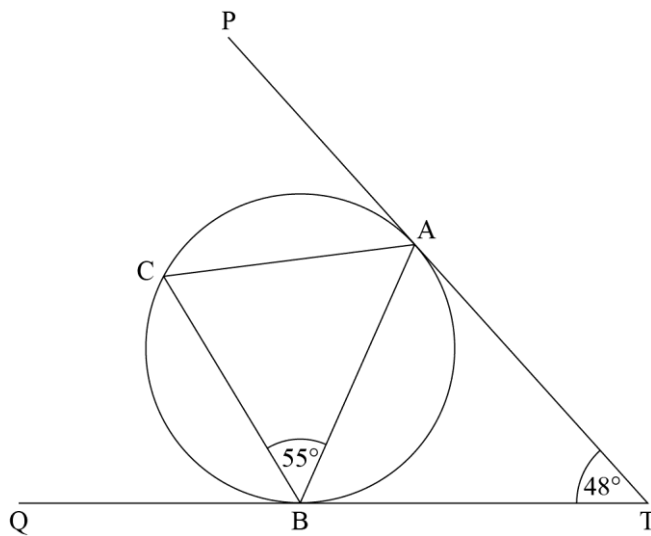


(4 marks)



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- 7 Points A, B and C lie on a circle.
TAP and TBQ are tangents to the circle from the point T.
Angle BTA = 48° and angle ABC = 55° .



- a Work out the size of angle ABT.

(2 marks)

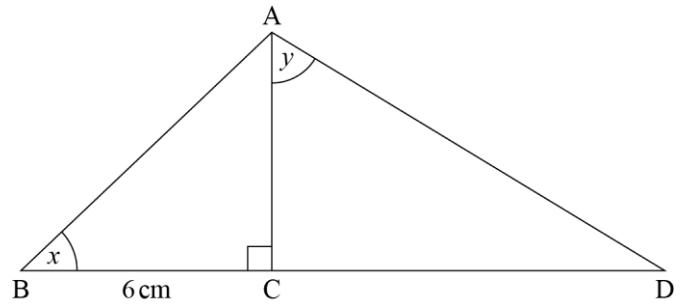
- b Work out the size of angle CAB.

(2 marks)



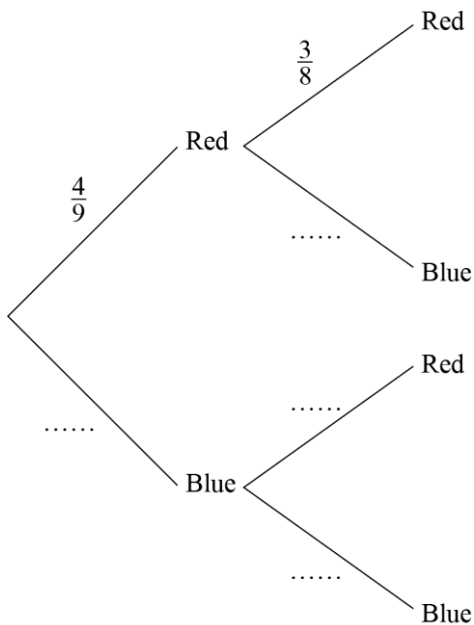
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- 8 In the diagram, BCD is a straight line.
 Angle ACB is a right angle.
 $BC = 6\text{cm}$, $\tan x = 1.3$ and $\cos y = 0.4$
 Work out the length of AD.



(3 marks)

- 9 Paula has four red balls and five blue balls in a bag.
 She takes out two balls at random.
- a Complete the tree diagram to show the possible outcomes.





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(3 marks)

b What is the probability that Paula selects at least one red ball?

(2 marks)

Overall mark	<i>/37</i>
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