

Edexcel GCSE Mathematics Calculator 2020 Higher Paper 3 Revision Worksheet

Question 1

(a) Simplify $n^3 \times n^5$

(b) Simplify $\frac{c^3 d^4}{c^2 d}$

(c) Solve $\frac{5x}{2} > 7$

Question 2

Andy cycles a distance of 30 km at an average speed of 24 km/h. He then runs a distance of 12 km at an average speed of 8 km/h.

Work out the total time Andy takes. Give your answer in hours and minutes.

Question 3

A number, m , is rounded to 1 decimal place. The result is 9.

Complete the error interval for m .

$$\leq m <$$

Question 4

Maisie knows that she needs 3 kg of grass seed to make a rectangular lawn 5 m by 9 m.

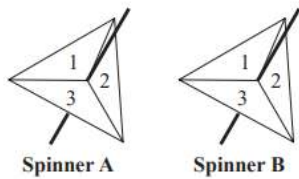
Grass seed is sold in 2 kg boxes

Maisie wants to make a rectangular lawn 10 m by 14 m. She has 5 boxes of grass seed.

- (a) Has Maisie got enough grass seed to make a lawn 10 m by 14 m? You must show all your working.
- (b) Maisie opens the 5 boxes of grass seed. She finds that 4 of the boxes contain 2 kg of grass seed. The other box contains 1 kg of grass seed. Does this affect whether Maisie has enough grass seed to make her lawn? Give a reason for your answer.
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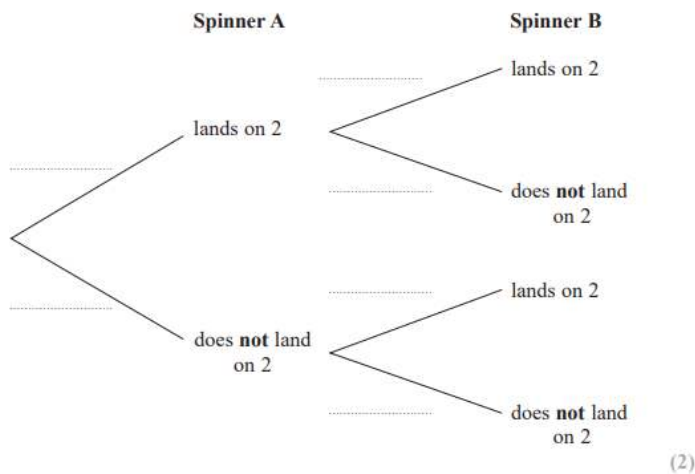
Question 5

Amanda has two fair 3-sided spinners.



Amanda spins each spinner once.

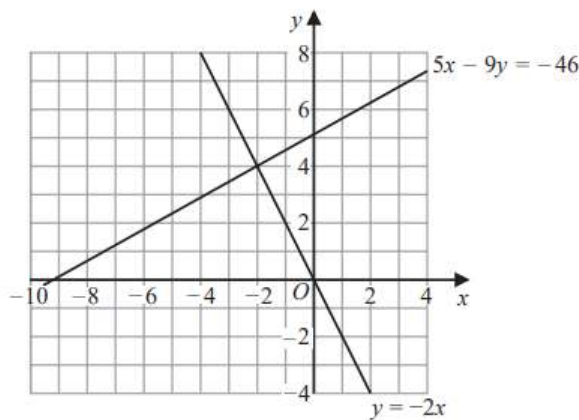
(a) Complete the probability tree diagram.



(b) Work out the probability that Spinner A lands on 2 and Spinner B does not land on 2

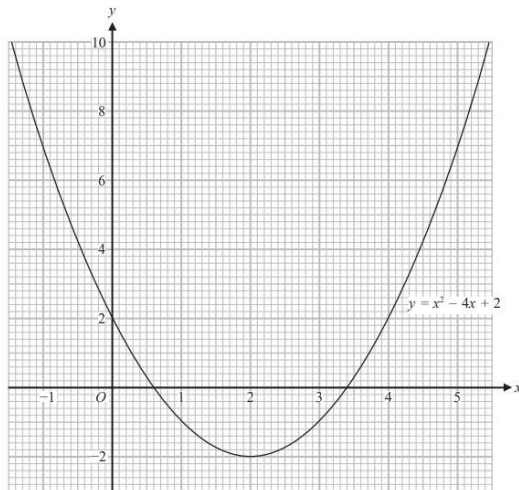
- (a) Complete the probability tree diagram for Spinner A and Spinner B landing on 2 or not 2.
- (b) Work out the probability that Spinner A lands on 2 and Spinner B does not land on 2.

Question 6



(a) Use these graphs to solve the simultaneous equations

$$\begin{aligned} 5x - 9y &= -46 \\ y &= -2x \end{aligned}$$



(b) Use this graph to find estimates for the solutions of the quadratic equation $x^2 - 4x + 2 = 0$

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Question 7

There is a total of 45 boys and girls in a choir. The mean age of the 18 boys is 16.2 years. The mean age of the 27 girls is 16.7 years.

Calculate the mean age of all 45 boys and girls.

Question 8

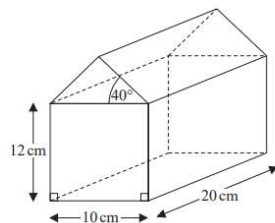
There are some counters in a bag. The counters are blue or green or red or yellow. The table shows the probabilities that a counter taken at random from the bag will be blue or will be green.

Colour	blue	green	red	yellow
Probability	0.32	0.20		

The probability that a counter taken at random will be red is five times the probability that the counter will be yellow. There are 300 counters in the bag.

Work out the number of yellow counters in the bag.

Question 9



The cross section of the prism has exactly one line of symmetry.

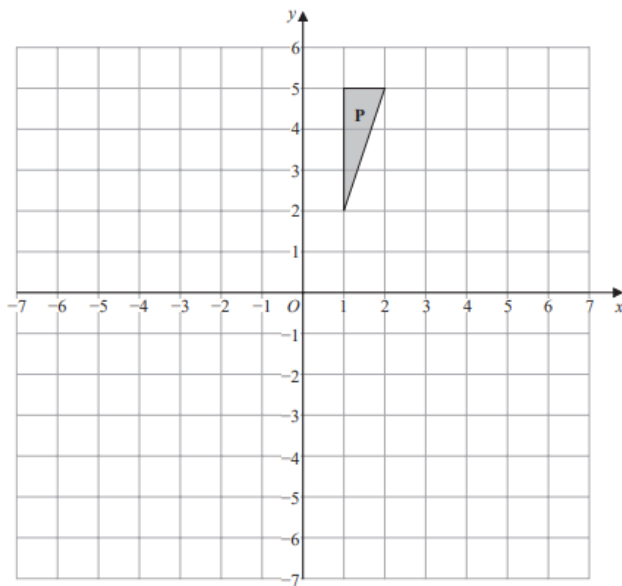
Work out the volume of the prism. Give your answer correct to 3 significant figures.

Question 10

(a) A person's heart beats approximately 10^5 times each day. A person lives for approximately 81 years. Work out an estimate for the number of times a person's heart beats in their lifetime. Give your answer in standard form correct to 2 significant figures.

(b) 2×10^{12} red blood cells have a total mass of 90 grams. Work out the average mass of 1 red blood cell. Give your answer in standard form.

Question 11



The diagram shows a triangle P on a grid. Triangle Q is translated by $\begin{pmatrix} 5 \\ -2 \end{pmatrix}$ to give triangle R.

(a) Describe fully the single transformation that maps triangle P onto triangle R.

(b) Under the transformation that maps triangle P onto triangle R, the point A is invariant. Write down the coordinates of point A.

Question 12

(a) Express $\frac{x}{x+2} + \frac{2x}{x-4}$ as a single fraction in its simplest form.

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