

Write your name here

Surname

Other Names

Mathematics

**November 2018 Paper 1 (Non Calculator)
Part 2 (Second half of the paper)
Edexcel Foundation Tier**

Time: 45 minutes

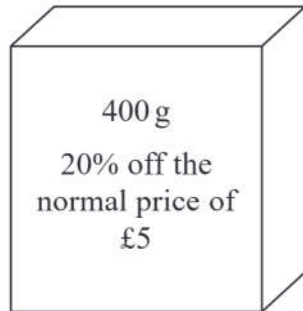
Q	Topic	Max Mark	My Marks
18	Percentage of Amount, Best Buys	4	
19	Transformations, Rotation	2	
20	Indices	2	
21	Substitution, Changing the Subject	4	
22	Percentage of Amount, Division	5	
23	Inverse Proportion	3	
24	Compound Measures, Time Conversion	4	
25	Simultaneous Equations	3	
26	Area of a Sector, Area	4	
27	Probability Trees	4	
28	Angles in Polygons, Forming Equations	3	
	Total	38	

For worked solutions and video solutions visit mathsgenie.co.uk

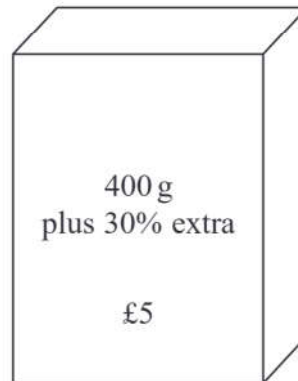
18 Food Mart and Jan's Store sell boxes of the same type of breakfast cereal.

Each shop has a special offer.

Food Mart



Jan's Store



Which box of cereal is the better value for money?
You must show your working.

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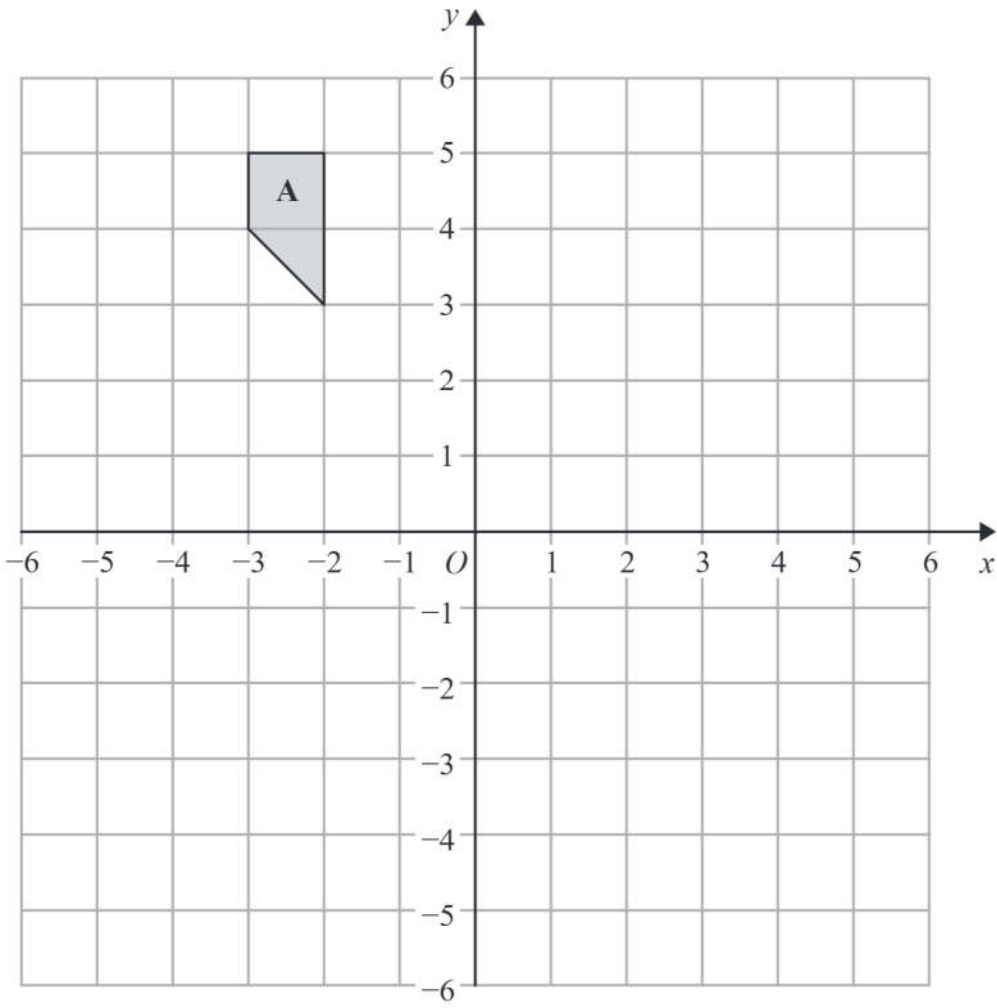
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(Total for Question 18 is 4 marks)



19



Rotate shape A 180° about $(1, 0)$

(Total for Question 19 is 2 marks)

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20 Work out the value of $\frac{3^7 \times 3^{-2}}{3^3}$

.....
(Total for Question 20 is 2 marks)

21 $v^2 = u^2 + 2as$

$$u = 12 \quad a = -3 \quad s = 18$$

(a) Work out a value of v .

.....
(2)

(b) Make s the subject of $v^2 = u^2 + 2as$

.....
(2)

(Total for Question 21 is 4 marks)



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- 22 A bonus of £2100 is shared by 10 people who work for a company.
40% of the bonus is shared equally between 3 managers.
The rest of the bonus is shared equally between 7 salesmen.

One of the salesmen says,

“If the bonus is shared equally between all 10 people I will get 25% more money.”

Is the salesman correct?

You must show how you get your answer.

(Total for Question 22 is 5 marks)



23 It would take 120 minutes to fill a swimming pool using water from 5 taps.

(a) How many minutes will it take to fill the pool if only 3 of the taps are used?

..... minutes
(2)

(b) State one assumption you made in working out your answer to part (a).

.....
.....
(1)

(Total for Question 23 is 3 marks)

24 A plane travels at a speed of 213 miles per hour.

(a) Work out an estimate for the number of seconds the plane takes to travel 1 mile.

..... seconds
(3)

(b) Is your answer to part (a) an underestimate or an overestimate?
Give a reason for your answer.

.....
.....
(1)

(Total for Question 24 is 4 marks)



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25 Solve the simultaneous equations

$$\begin{aligned}5x + y &= 21 \\ x - 3y &= 9\end{aligned}$$

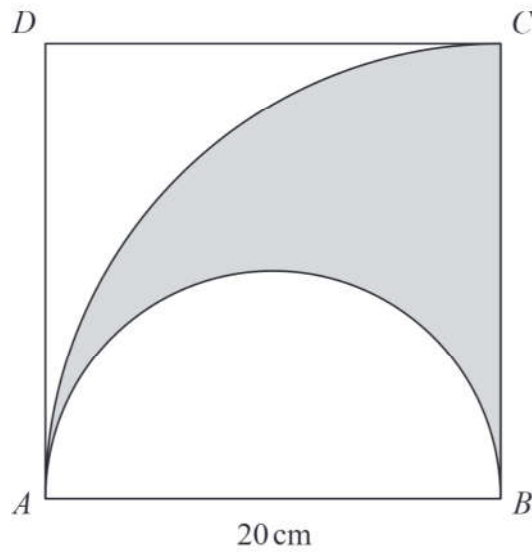
$x =$

$y =$

(Total for Question 25 is 3 marks)



- 26 The diagram shows a square $ABCD$ with sides of length 20 cm. It also shows a semicircle and an arc of a circle.



AB is the diameter of the semicircle.
 AC is an arc of a circle with centre B .

Show that
$$\frac{\text{area of shaded region}}{\text{area of square}} = \frac{\pi}{8}$$

(Total for Question 26 is 4 marks)

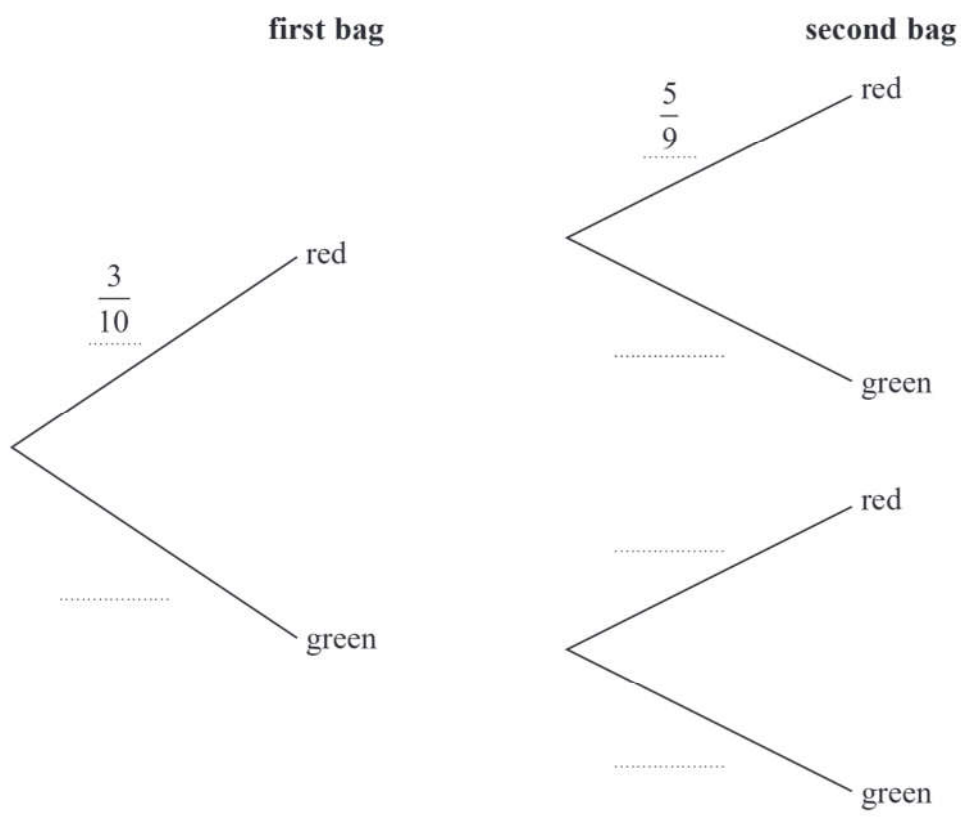


27 Amina has two bags.

In the first bag there are 3 red balls and 7 green balls.
In the second bag there are 5 red balls and 4 green balls.

Amina takes at random a ball from the first bag.
She then takes at random a ball from the second bag.

(a) Complete the probability tree diagram.



(2)

(b) Work out the probability that Amina takes two red balls.

.....
(2)

(Total for Question 27 is 4 marks)



- 28 The size of each interior angle of a regular polygon is 11 times the size of each exterior angle.
Work out how many sides the polygon has.

(Total for Question 28 is 3 marks)

TOTAL FOR PAPER IS 80 MARKS

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