

**AQA, OCR, Edexcel**

**GCSE**

# **GCSE Maths**

**Edexcel June 14 Paper 1**

Name:

**M**

**M**

**E**

**Mathsmadeeasy.co.uk**

Total Marks:

Edexcel June 14 P1

1a.

$$\frac{1}{7} \times \frac{2}{3} = \frac{2}{21}$$

1b.

$$\frac{3}{5} - \frac{1}{3}$$

$$\frac{9}{15} - \frac{5}{15} = \frac{4}{15}$$

2a.

0	5	9						
1	3	5	6	8	9	9		
2	1	2	3	3	5	7	8	9
3	1	2	4					
4	0							
5								

key 0/5 = 5 minutes

3.

	Sq	Gy	Sw	Total
Female	2	4	15	21
Male	6	14	9	29
Total	8	18	24	50

4 females used the gym

4.

$$\frac{1}{3} \text{ off } £24 = £24 - 8 = £16 \text{ for adult}$$

$$2 \text{ children so } 2 \times £12 = £24$$

$$10\% \text{ of } £24 = £2.40$$

$$60\% = 6 \times £2.40 = £14.40$$

$$£24 - £14.40 = £9.60 \text{ for children}$$

$$£16 + £9.60 = £25.60$$

5. How many books do you buy per week?



none



1-2



3-4

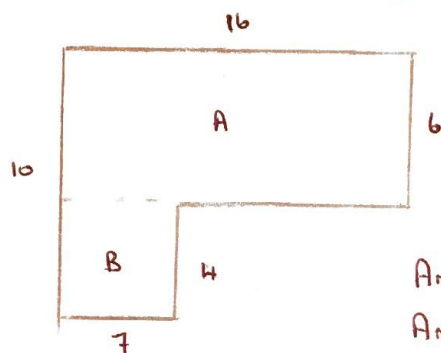


5+

6a.  $2m(m+3) = 2m^2 + 6m$

6b.  $3xy^2 - 6xy = 3xy(y - 2)$

7.



Area of A =  $16 \times 6 = 96 \text{ m}^2$

Area of B =  $4 \times 7 = 28 \text{ m}^2$

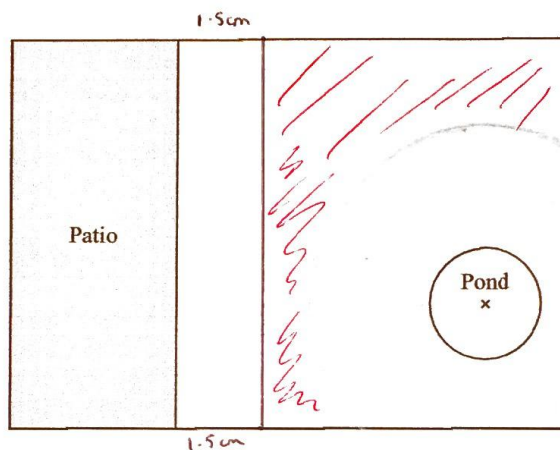
So total area =  $124 \text{ m}^2$

$$\frac{124}{36} = \frac{62}{18} = \frac{31}{9} = 3 \frac{4}{9}$$

So he only has room for 3 pigs

8 The diagram shows a garden in the shape of a rectangle.

The scale of the diagram is 1 cm represents 2 m.



Scale: 1 cm represents 2 m

Irfan is going to plant a tree in the garden.

The tree must be

**and** more than 3 metres from the patio  
more than 6 metres from the centre of the pond.

On the diagram, shade the region where Irfan can plant the tree.

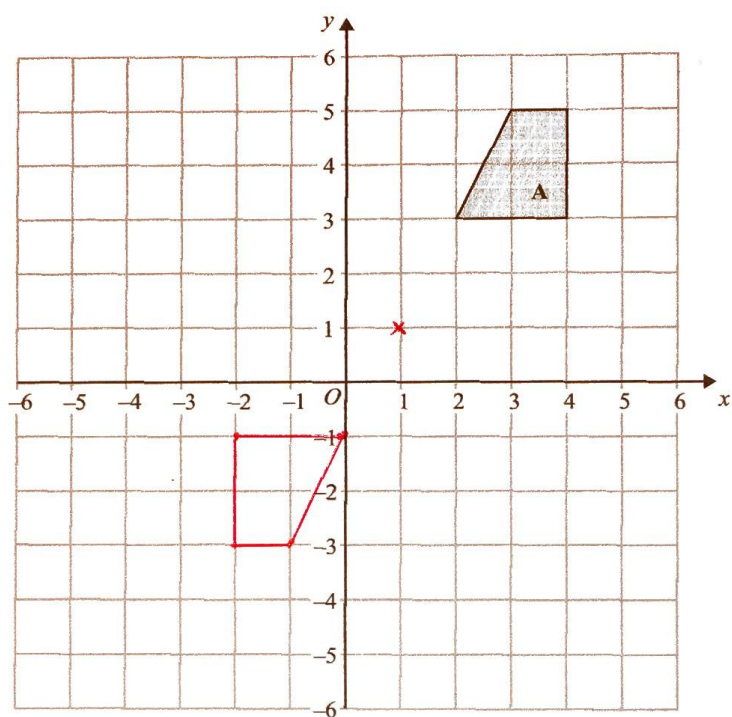
(Total for Question 8 is 3 marks)

$$3\text{m} = 1.5\text{cm}$$

$$6\text{m} = 3\text{cm}$$



9



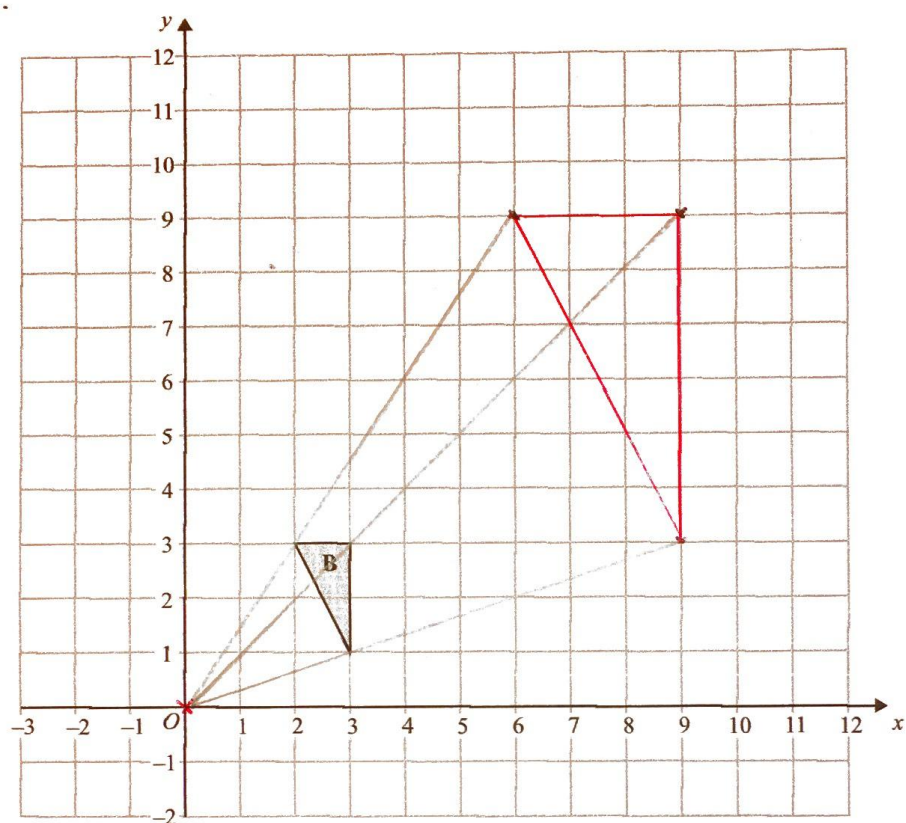
(a) On the grid, rotate shape A  $180^\circ$  about the point (1, 1).

(2)

10



9b.



(b) On the grid, enlarge triangle **B** by scale factor 3, centre  $(0, 0)$ .

(2)

(Total for Question 9 is 4 marks)



P 4 4 0 2 2 A 0 1 1 2 8

11

Turn over ►

10.

$$4 \text{ pints} = £1.18$$

$$6 \text{ pints} = £1.74$$

$$12 \text{ pints} = £3.54$$

$$12 \text{ pints} = £3.48$$

The 6 pint bottle is better value for money, as 12 pints would be 6p cheaper.

11.

$$\begin{aligned} \text{Interior angle of regular pentagon} &= \frac{(5-2) \times 180}{5} \\ &= \frac{3 \times 180}{5} \\ &= \frac{540}{5} = 108^\circ \end{aligned}$$

$$\text{so } \hat{DCF} = \hat{CDF} = 180 - 108 = 72^\circ \quad (\text{angles on straight line})$$

$$\therefore F = 180 - 72 - 72$$

$$= 180 - 144$$

$$= 36^\circ \quad (\text{angles in triangle sum to } 180^\circ)$$

12a

$$C = \frac{5(77 - 32)}{9}$$

$$= \frac{5 \times 45}{9}$$

$$= 5 \times 5$$

$$= 25^\circ$$

$25 > 20$  so the temperature is not lower.

$25 > \text{minimum}$

12b

$$C = \frac{5(F-32)}{9} \times 9$$

$$9C = 5(F-32) \quad (\div 5)$$

$$\frac{9C}{5} = F-32 \quad (+32)$$

$$\frac{9C}{5} + 32 = F$$

13.

$$\begin{aligned} 24 \text{ hours} &= 60 \times 60 \times 24 \\ &\approx 60 \times 60 \times 20 \\ &\approx 72,000 \end{aligned}$$

$$2014 \approx 2000$$

$$\frac{72,000}{2,000} = 36$$

So 36 prizes won in 24 hours

14.

	miles	:	km
	5	:	8
	50	:	80
$\times 6$	300	:	480 $\downarrow \times 6$

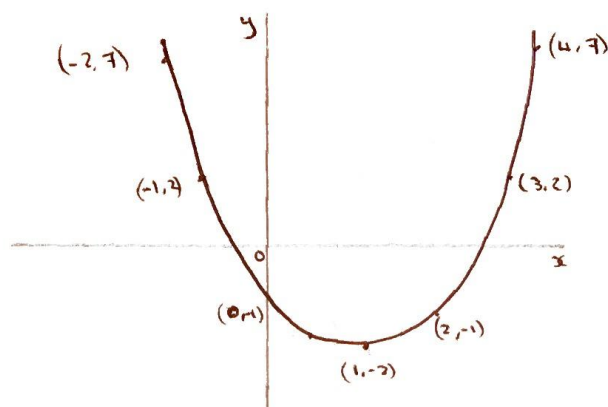
So she needs to go 300 miles at 50 mph

$$t = \frac{d}{s} = \frac{300}{50} = 6 \text{ hours}$$

15a

x	-2	-1	0	1	2	3	4
y	7	2	-1	-2	-1	2	7





15b.

15c.

$$x^2 = 2x - 1 \Rightarrow x + 3$$

$$x^2 - 3x - 4 = 0$$

$$(x - 4)(x + 1) = 0$$

$$x = 4 \text{ or } -1$$

16a.

$$LQ = 4.9 \quad UQ = 5.6$$

$$IQR = 5.6 - 4.9 = 0.7$$

16b.

$$5.6 = UQ \text{ so } \frac{1}{4} \text{ were further than } 5.6$$

$$\frac{1}{4} \times 80 = 20$$

16c.

The median distance in the second half was less

The IQR was the same for both halves

17a.

$$10^0 = 1$$

17b.

$$10^{-2} = \frac{1}{10^2} = \frac{1}{100}$$

17c.

$$2.73 \times 10^3$$

$$2.7 \times 10^{-3}$$

$$2.73 \times 10^2$$

$$0.00273$$

$$2.7 \times 10^{-2}$$

$$2.73 \times 10^4$$

$$2.73 \times 10^{-3}$$

$$0.00273 < 2.703 \times 10^{-3} < 2.73 \times 10^3 < 2.73 \times 10^2$$

18.

$$4x + y = 25 \quad \times 3$$

$$x - 3y = 16$$

$$12x + 3y = 75$$

$$+ \quad x - 3y = 16$$

$$13x = 91 \quad (\div 13)$$

$$x = 7$$

$$\text{if } x = 7$$

$$7 - 3y = 16 \quad (-7)$$

$$-3y = 9 \quad (\div -3)$$

$$y = -3$$

19.

$$\text{grad of } L_1 = \frac{1}{2} \quad \text{so grad of } L_2 = \frac{1}{2}$$

$$L_2 \text{ goes through } (0, -5)$$

$$y = mx + c$$

$$-5 = \frac{1}{2}(0) + c \quad c = -5$$

$$y = \frac{1}{2}x - 5$$

20.

$$\frac{15}{10} = 1.5 \quad \text{s.f.}$$

$$16 \times 1.5 = 30 - x$$

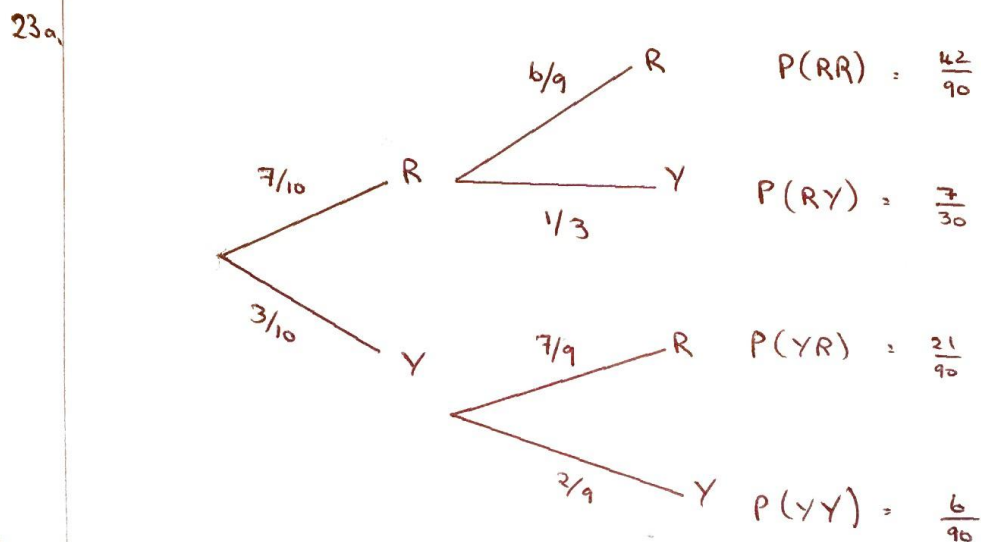
$$24 = 30 - x$$

$$x = 30 - 24$$

$$= 6 \text{ cm}$$

22a.  $(3x^2y^4)^3 = 3^3(x^2)^3(y^4)^3$   
 $= 27x^6y^{12}$

22b.  $\frac{x^2-9}{2x^2+5x-3} = \frac{(x+3)(x-3)}{(2x-1)(x+3)} = \frac{x-3}{2x-1}$



23b.  $P(\text{at least one } Y) = P(RY) + P(YR) + P(YY)$   
 $= \frac{21}{90} + \frac{21}{90} + \frac{6}{90}$   
 $= \frac{48}{90}$

24.  $\vec{AB} = \vec{AO} + \vec{OB}$   
 $= -2\vec{m} + 2\vec{n}$   
 $\vec{AB} = 2(-\vec{m} + \vec{n})$   
 $\vec{MN} = \vec{MO} + \vec{ON}$   
 $= -\vec{m} + \vec{n}$   
 $\vec{AB} = 2\vec{MN}$   
 $\therefore \text{parallel}$

25a.

$$\frac{12}{\sqrt{3}} = \frac{12\sqrt{3}}{\sqrt{3} \times \sqrt{3}}, \quad \frac{12\sqrt{3}}{3} = 4\sqrt{3}$$

25b.

$$\begin{aligned}(\sqrt{2} + \sqrt{8})(\sqrt{2} + \sqrt{8}) &= (\sqrt{2})^2 + \sqrt{16} + \sqrt{16} + (\sqrt{8})^2 \\&= 2 + 4 + 4 + 8 \\&= 18\end{aligned}$$

26a.

$$(80, 0)$$

26b.

$$(270, -1)$$

26c.

$$y = a \cos bx$$

stretch s.f.  $a$  in  $y$  direction  $\Rightarrow a = 2$

stretch s.f.  $\frac{1}{b}$  in  $x$  direction  $\Rightarrow b = 3$

translation  $c$  up  $\Rightarrow c = 1$

21

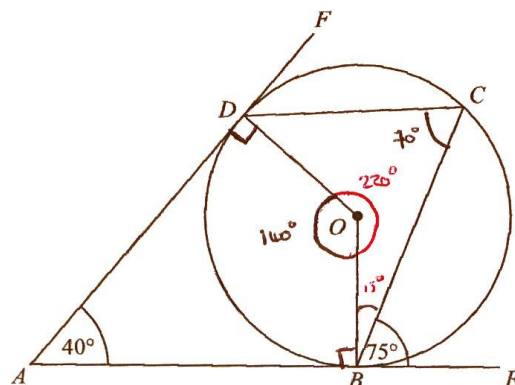


Diagram NOT  
accurately drawn

$B$ ,  $C$  and  $D$  are points on the circumference of a circle, centre  $O$ .  
 $ABE$  and  $ADF$  are tangents to the circle.

Angle  $DAB = 40^\circ$

Angle  $CBE = 75^\circ$

Work out the size of angle  $ODC$ .

$$\hat{A}DO = \hat{A}BO = 90^\circ \quad (\text{tangents meet radius at } 90^\circ)$$

Quadrilateral  $ADOB$  sums to  $360^\circ$

$$40 + 90 + 90 + \hat{D}OB = 360$$

$$\hat{D}OB = 140^\circ$$

$$\hat{C} = 70^\circ = \text{angle at circumference half}$$

angle at centre

(Total for Question 21 is 3 marks)

$$\hat{O}DCB = \text{quad so sums to } 360^\circ$$

$$220 + 15 + 70 + \hat{O}DC = 360$$

$$\hat{O}DC = 55^\circ$$



P 4 4 0 2 2 A 0 2 3 2 8

23

Turn over ►