

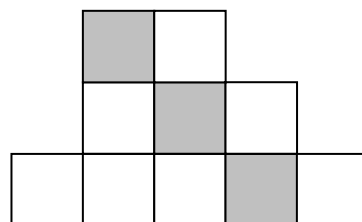
## Test 2

## Essential Maths Book 7C Units 3 & 4

No calculators

1. a) Look at the shape on the right.  
What percentage of the shape is shaded?

(2 marks)



- b) Work out 8% of £250. (1 mark)

2. Suppose you roll an ordinary dice with numbers 1, 2, 3, 4, 5, 6.

Find the probability that you roll

- a) a 6 (1 mark)  
b) a number less than 3 (1 mark)  
c) a 7 (1 mark)

3. Look at these numbers 4, 15, 7, 36, 21

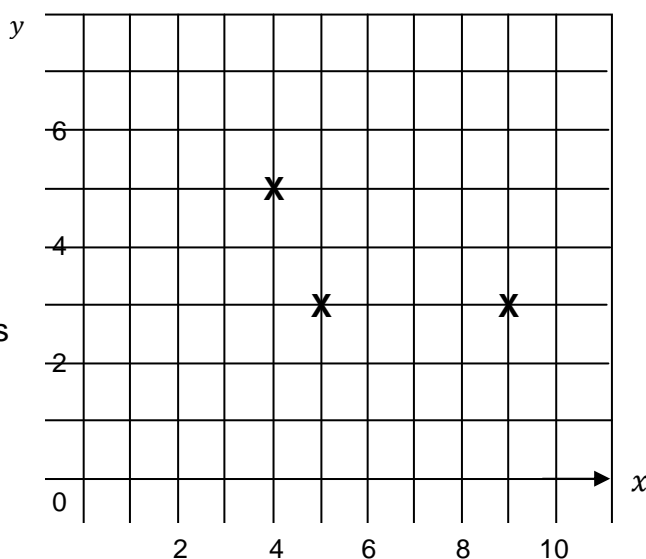
- a) Which number is a **multiple** of 5?  
b) Which number is a **factor** of 14?  
c) Which of the numbers are **prime** numbers?  
d) Which of the numbers are **square** numbers? (4 marks)

4. The diagram shows three vertices of a parallelogram.

- a) Copy the diagram and mark the **three** possible positions for the fourth vertex. (2 marks)

- b) Write down the coordinates of the points you found in part (a)

(2 marks)



5. a) Look at this equation  $m + n = 12$

Write down three different solutions to the equation.

(2 marks)

Write  $m = \dots\dots\dots$ ,  $n = \dots\dots\dots$

- b) Now look at the equation  $mn = 35$

What values of  $m$  and  $n$  are solutions to *both*  $m + n = 12$  and  $mn = 35$ ?

(1 mark)

- 
6. Copy and complete this multiplication grid.

(3 marks)

x	4	-2	-5
3	12		
-2			
6			

- 
7. a)  $\text{£}1 = 1.18 \text{ euros}$

How much is  $\text{£}20$  in euros?

(1 mark)

- b)  $\frac{3}{8}$  is 0.375 as a decimal

What is  $\frac{11}{8}$  as a decimal?

(1 mark)

- 
8. There are 15 players in a rugby team and there are 207 boys in a school.

- a) How many teams of 15 can be formed?

(2 marks)

- b) How many boys will be left over?

(1 mark)

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9. Every rectangle and every parallelogram have the property:

*They each have four sides.*

- a) State another property that every rectangle and every parallelogram has.

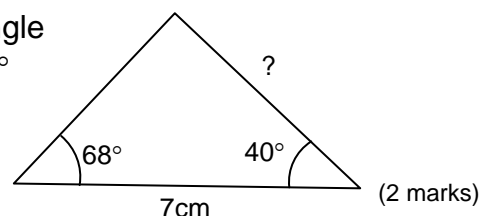
- b) Give a property of the rectangle that is not a property of the parallelogram.

(2 marks)

10. a) Ella and Conor are given £65 to share in the ratio 3:2  
How much does each person get? (2 marks)
- b) £40 can be exchanged for 74 dollars.  
How many dollars can be exchanged for £160? (1 mark)
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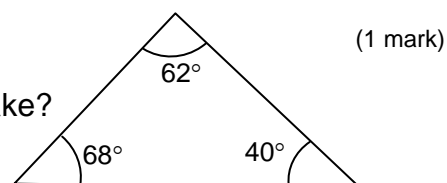
11. a) Use a ruler and protractor to draw a triangle with a base of 7cm and two angles of  $68^\circ$  and  $40^\circ$  as shown.

Measure and write down the length of the side of the triangle opposite the  $68^\circ$  angle.



- b) Karen drew a triangle and measured the angles. The diagram shows her results.

How do you know that Karen made a mistake?



- 
12. a) A car journey from Liverpool to Bristol takes 7.5 hours.  
How long is this in hours and minutes? (1 mark)
- b) A journey by train takes 10% longer.  
How long is the journey by train? (2 marks)  
Give your answer in hours as a decimal number.
- 

13. In these sequences the numbers go up in *equal steps*.  
Copy each sequence and fill in the missing numbers.

- a) 

	2	5			14
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 (1 mark)
- b) 

		1	5	9	
--	--	---	---	---	--

 (2 marks)
- c) 

-2					23
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 (2 marks)

14. Work out the following. You must show your working.

a)  $5.32 \times 7$  (1 mark)

b)  $46.92 \div 6$  (1 mark)

c)  $(10 - 3.24) \times 0.5$  (1 mark)

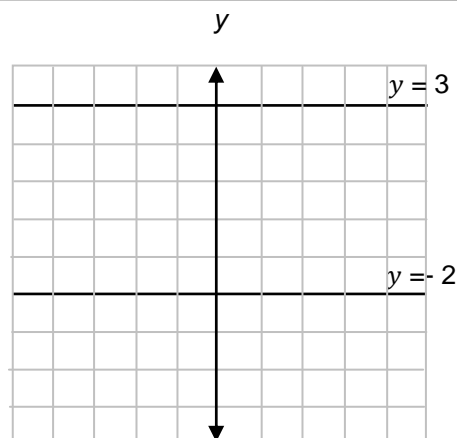
15. The grid shows the  $y$ -axis and the lines  $y = 3$  and  $y = -2$ .

Draw your own grid and draw on it:

a) the  $x$ -axis

b) the line  $x = 2$

c) the line  $y = x$  (3 marks)



16.  $a$  and  $b$  are two numbers.

We know that

$$a + b = 9$$

$$a > b$$

$$b < 4$$

What values could  $a$  and  $b$  be?

Write two pairs:  $a = \dots\dots, b = \dots\dots$  or  $a = \dots\dots, b = \dots\dots$  (2 marks)

17. Write each statement and write a number in each box.

a)  $8.2 - \square = 1.8$  (1 mark)

b)  $\square \div 10 = 0.32$  (1 mark)

c)  $4.8 < \square < 4.9$  (1 mark)

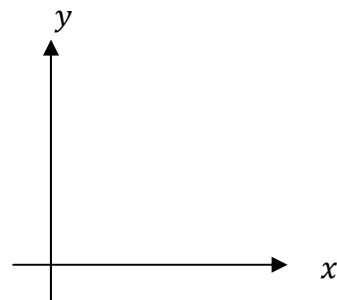
d)  $\left[ \frac{\square \times 10}{3} \right] - 1 = 50$  (2 marks)

18. Here is the equation of a line

$$y = 2x - 1$$

These points are on the line

(0, -1), (1, 1), (2, ) , (3, ) , (4, )



Find the missing numbers and then plot the points  
on a graph using squared paper.

(2 marks)

Draw the graph of  $y = 2x - 1$

(2 marks)

- 
19. On one day a dentist saw 25 people altogether.

14 of the 25 people were female.

8 of the 14 females were adults.

The dentist saw 4 male children.

Copy the table and fill it in to show this information.

	Male	Female
Adult		
Child		

(2 marks)

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20. A cake is cut into 3 slices from the centre.

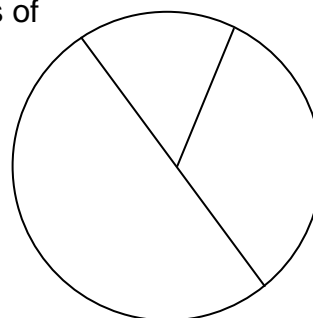
The size of the slices is proportional to the ages of  
the children eating the cake.

Ann is 5 years old

Becky is 10 years old

Don is 15 years old

What will be the angle at the centre of Ann's slice?



(not to scale)

(2 marks)