

### Test 3

### Essential Maths 9S units 5 & 6

No Calculators

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1. Work out
- (a)  $\sqrt{81 + 211}$  (1 mark)
- (b)  $2^2 + 3^2 + 4^2$  (1 mark)
- (c)  $\sqrt{6^2 + 8^2}$  (1 mark)
- 

2. Solve the equations.

(a)  $7a - 9 = 54$  (1 mark)

(b)  $5n - 8 = 2n + 10$  (2 marks)

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3. Copy and complete.

(a) 5% of 300 =  (1 mark)

(b)  $23 \div$    $= 0.23$  (1 mark)

(c)   $\times 12 = 600$  (1 mark)

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4. Write the number 24 as the sum of two prime numbers.

Do this in three different ways (3 marks)

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5. A chef needs 1100g of potatoes to make 5 meals.

How many grams of potatoes does he need to make 22 meals?

(3 marks)

6. These are the marks of some pupils in a test.

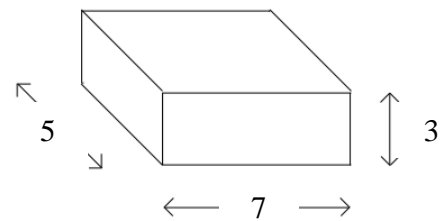
37	28	45	61	29	54	32
41	57	60	23	42	66	

Stem	Leaf
2	
3	7
4	
5	
6	

Key	
3	7
= 37	

- (a) Write these numbers on the stem and leaf diagram.  
The first number 37, is shown. (3 marks)
- (b) What was the median? (1 mark)
- (c) What was the range? (1 mark)

7. The diagram shows a solid cuboid. All lengths are in cm.



- (a) Work out the volume of the cuboid. (1 mark)
- (b) Work out the total surface area of the cuboid. (3 marks)

8. Find the value of each expression when

$$\begin{aligned} a &= 3 \\ b &= 7 \\ c &= 4 \end{aligned}$$

- (a)  $b(a + b) =$  (1 mark)
- (b)  $5a - 3c =$  (1 mark)
- (c)  $\frac{b^2 + a}{c} =$  (2 marks)

9. A farmer has ducks, chickens and geese in the ratio 8:3:4. He has 24 geese.  
How many chickens does he have?

10. A minibus can carry 17 passengers. How many minibuses are needed for 200 passengers?

(2 marks)

(2 marks)

11.

*Paris*  
 $14^{\circ}\text{C}$

*Helsinki*  
 $-15^{\circ}\text{C}$

*Nice*  
 $27^{\circ}\text{C}$

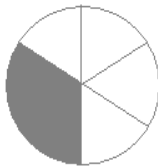
- (a) How much colder is Helsinki than Paris?
- (b) What is the temperature difference between Nice and Helsinki?
- (c) The temperature in Helsinki rises by  $18^{\circ}\text{C}$ . What is the new temperature?

(1 mark)

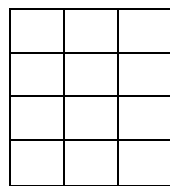
(1 mark)

(1 mark)

12.



A



B

Draw a copy of diagram B and shade in some squares so that the same fraction of diagrams A and B is shaded.

(2 marks)

13. A TV film starts at 19:20. The film is 55 minutes long. When does the film finish?

(2 marks)

14. In the magic square the sum of the numbers in each row, column and main diagonal is the same.

Copy and complete.

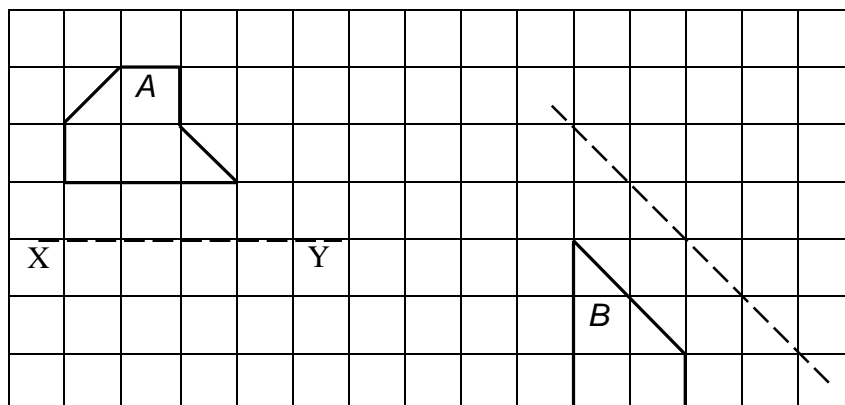
1	6	
	2	
		3

(3 marks)

15. Copy the diagram on squared paper.

(a) Draw the reflection of shape *A* in the horizontal broken line *XY*.

(1 mark)



(b) Draw the reflection of shape *B* in the diagonal broken line

(2 marks)

16. Work out (a)  $\frac{5}{8}$  of 40 =

(1 mark)

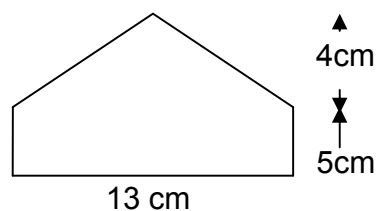
(b)  $\frac{3}{10} + \frac{4}{10} =$

(1 mark)

(c) 22% of £500 =

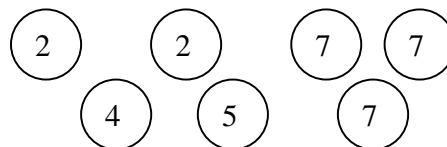
(2 marks)

17. Work out the area of this shape.



(3 marks)

18. These balls are placed in a bag. One ball is taken out at random. Find the probability of selecting.



(a) a 5

(1 mark)

(b) a 7

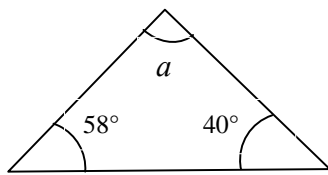
(1 mark)

(c) a 6

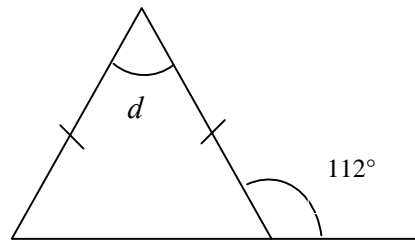
(1 mark)

19. (a) Write down 3 numbers with a mean of 5 (1 mark)  
(b) Write down 5 numbers with a median of 7 (1 mark)  
(c) Write down 8 numbers with a range of 11 (1 mark)
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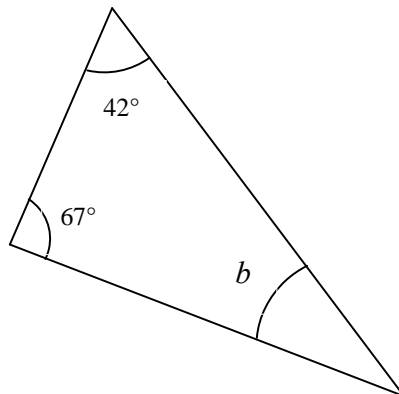
20. Work out the angles marked with letters. (Do not just measure the angles)



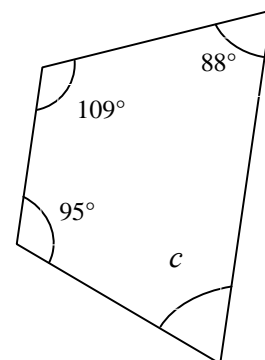
(1 mark)



(2 marks)



(1 mark)



(1 mark)