

First name	
Last name	
School	

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CE AT 13+

# MATHEMATICS



Foundation Non-Calculator Paper

Specimen Paper

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Date

Time allowed: 60 minutes

## Instructions

Answer as many questions as you can.

Clear working to long-answer questions should be written in the grey boxes, along with any final results, which should be double underlined.

**For long-answer questions, marks will be awarded for working.**

**Answers should include correct units, where necessary.**

Answers given as fractions should be reduced to lowest terms and written as mixed numbers, where appropriate.

Diagrams are not drawn accurately unless otherwise specified.

You are encouraged to cross out mistakes neatly, not erase them.

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1. (a) Complete the calculations.

		(i)	7	3	4									(ii)	8	7	0				
			5	8	7	+									1	5	6	-			

[4]

(b) Calculate

(i) 385 ÷ 5

(ii) 74 x 3


[4]

2. Circle the bigger number in each pair.

(a) 68      86

(b) 54      540

(c) 4.16      4.8

[2]

3. Write these numbers in the correct columns.

526

8

73

1.4

8200

2.75

		5	2	6		

[3]

4. (a) Match each fraction to a decimal with a line.

$$\frac{1}{4}$$

0.5

$$\frac{3}{4}$$

0.25

$$\frac{1}{2}$$

7.5

$$7\frac{1}{2}$$

0.75

[4]

- (b) (i) Write **0.9** as a fraction.

- (ii) Write **0.03** as a fraction.

.....

.....

[2]

- (c) Write these to the nearest whole number.

(i) 17.3

(ii) 3.82

(iii) 4.09

≈ .....

≈ .....

≈ .....

[3]

- (d) Write the next two numbers.

2.7 , 2.8 , 2.9 , ..... , .....

[2]

5. True or False? (Write **T** or **F**)

(a)  $12 - 2 = 2 - 12$  .....

(b)  $15 \times 7 = 7 \times 15$  .....

(c)  $73 \div 4 = 4 \div 73$  .....

(d)  $9^2 = 9 \times 2$  .....

[2]

6. Circle the correct operation for each question.

(a) What is the sum of 8 and 3?

$8 \times 3$

$3 - 8$

$8 - 3$

$8 \div 3$

$8 + 3$

[1]

(b) Tom buys 12 bags of nuts.

He buys 480 nuts altogether.

How many nuts are in each bag?

$12 \times 480$

$12 \div 480$

$480 \times 12$

$480 \div 12$

$480 - 12$

[1]

(c) Sarah eats 6 chocolates a day.

How many chocolates will she eat in 150 days?

$150 \div 6$

$6 \div 150$

$150 \times 6$

$150 - 6$

$6 - 150$

[1]

(d) How much bigger is 74 than 28?

$74 + 28$

$28 - 74$

$28 + 74$

$74 \times 28$

$74 - 28$

[1]

[4]

10. Use this  $24 \times 18 = 432$  to work out these

(a)  $24 \times 19$

= .....

(b)  $48 \times 18$

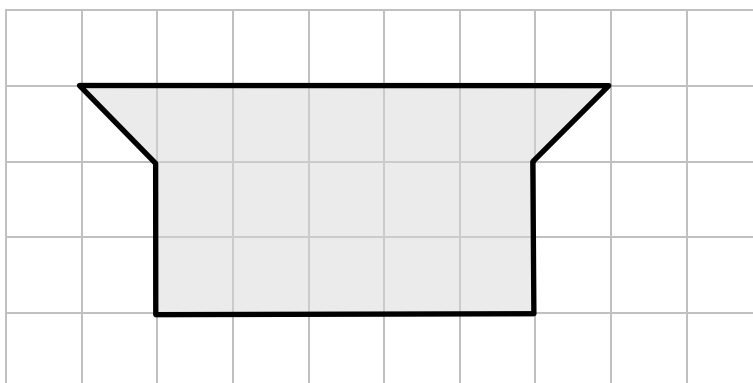
= .....

(c)  $432 \div 18$

= .....

[3]

11. Write down the **area** of the shape drawn on this centimetre grid.



Area = .....

[2]

12. Change  $\frac{4}{5}$  to a decimal

[2]

13. Find the **area** of this rectangle.



[3]

14. (a) Complete these (i)  $\frac{2}{5} = \frac{\quad}{15}$  (ii)  $\frac{3}{25} = \frac{\quad}{100}$

[2]

(b) Which is bigger?  $\frac{70}{80}$  or  $\frac{7}{8}$

Circle the correct answer.

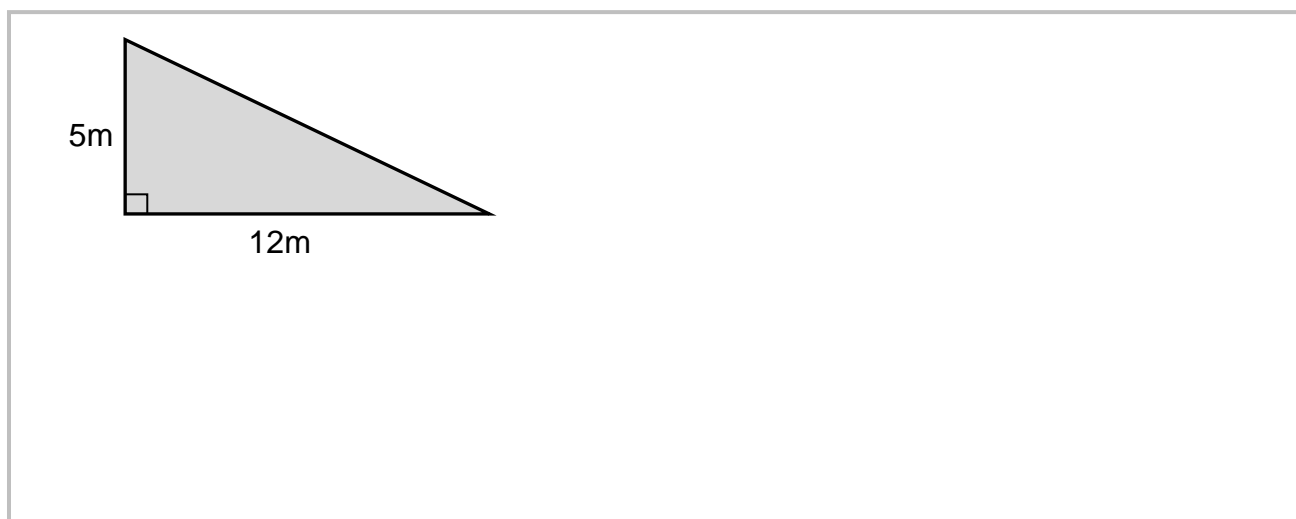
$\frac{70}{80}$	$\frac{7}{8}$	they are the same size
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[1]

(c) Reduce to lowest terms.  $\frac{12}{16}$  .....

[2]

15. Find the **area** of this triangle.

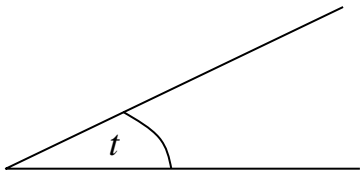


[3]

16. Change 15% to a fraction in lowest terms.

[2]

17. (a) **Estimate** the size of these angles.



$t \approx \dots\dots\dots^\circ$



$s \approx \dots\dots\dots^\circ$

[3]

(b) Calculate the size of each lettered angle.

Two lines intersect. One angle is labeled  $83^\circ$  and the adjacent angle is labeled  $x$ .

A circle with a central angle labeled  $p$ . A sector of the circle is shaded and labeled  $40^\circ$ .

A straight line is intersected by another line. One angle is labeled  $47^\circ$  and the adjacent angle is labeled  $y$ .

A triangle with interior angles labeled  $81^\circ$ ,  $q$ , and  $65^\circ$ .

Two parallel lines are intersected by a transversal. The top-right angle is labeled  $54^\circ$  and the bottom-left angle is labeled  $m$ .

[8]

18. **Estimate** the value of

$$498 \times 71$$

[3]

19. Solve the equations.

(a)  $5a + 2 = 17$

(b)  $3b - 5 = 22$

[4]

20. Work out

(a)  $4 + 3 \times 5$

(b)  $2 \times 5 + 7$

(c)  $20 - 4 \times 3 + 1$

[6]

21. (a) Sara and Jess share their hats in the ratio **4 : 7**

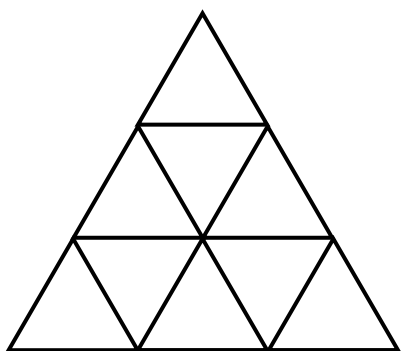
If Sara has 20 hats, how many has Jess?

[3]

- (b) Write the ratio **16 : 20** in its simplest form.

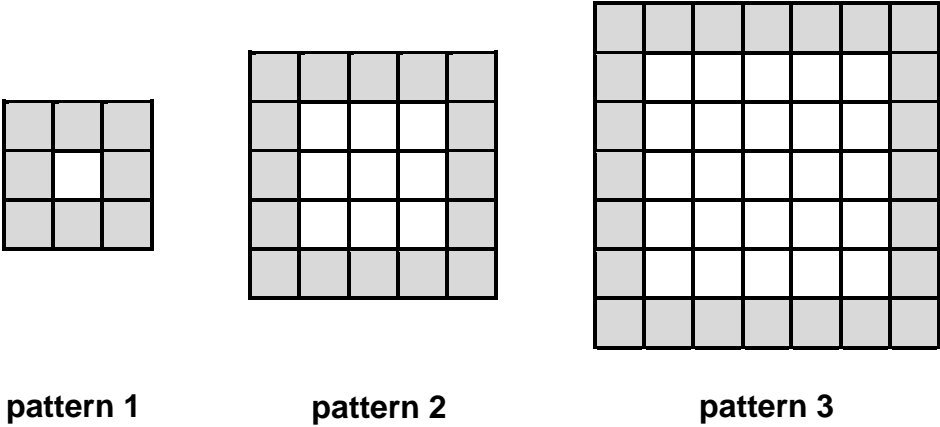
[2]

22. How many triangles are here altogether?



[3]

23. Look at this sequence of patterns.  
 There are small white squares and small grey squares.



(a) How many small white squares are there in **pattern 3**?  
 .....

(b) Work out the number of small white squares in **pattern 6**

(c) Work out the number of small grey squares in **pattern 10**