



Year 7 (11+) Entrance and Scholarship Examination

Maths



Name:

Time: 45 minutes

Instructions:

You may not use a calculator.

Section A contains 20 multiple-choice questions.

Answer each question by drawing a circle around the correct answer.

Use the space on the paper for working out.

Section B contains 3 problem-solving questions.

Attempt all questions and use the space on the paper to clearly show your working out.



SECTION A: MULTIPLE CHOICE QUESTIONS

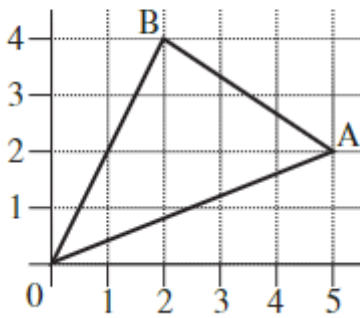
<p>1. A floor measures 6 m by $4\frac{1}{2}$ m and is covered by square carpet tiles measuring 50 cm by 50 cm. How many carpet tiles are needed?</p> <p>A 54 B 108 C 120 D 216</p>
<p><i>Working out:</i></p>
<p>2. Work out $\frac{3}{4} + 0.15$</p> <p>A $\frac{18}{104}$ B $\frac{45}{400}$ C $\frac{9}{10}$ D 0.09</p>
<p><i>Working out:</i></p>
<p>3. Solve the equation $8 = 9 - 2x$</p> <p>A $\frac{1}{2}$ B $-\frac{1}{2}$ C $8\frac{1}{2}$ D 1</p>
<p><i>Working out:</i></p>



4.	Which of the following statements are true? 1. 1% of 10 = 0.1 2. $12 \div 5 = 2.4$ 3. $7 \div 8 = 0.875$	A 1 and 2 B 1 and 3 C 2 and 3 D 1, 2 and 3
<i>Working out:</i>		
5.	At what point will the line $y = x$ cut the line $x = -3$?	A $(-3, -3)$ B $(3, 3)$ C $(-3, 0)$ D Impossible to say
<i>Working out:</i>		
6.	A picture measuring 30 cm by 20 cm is surrounded by a border 5 cm wide. What is the area of the border?	A 200 cm^2 B 225 cm^2 C 400 cm^2 D 600 cm^2
<i>Working out:</i>		



7. Find the area of triangle OAB in square units
- A** 7
B 8
C 9
D 10



Working out:

8. A man's heart beats at 70 beats/min. How many times will his heart beat between 0330 and 2330 on the same day?
- A** 6000
B 8400
C 72 000
D 84 000

Working out:

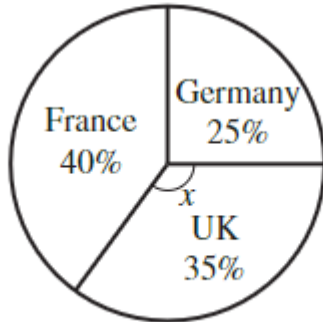
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9. Which is the best estimate when 20 yards is converted into metres.
- A** 19 m
B 21 m
C 210 m
D 1.9 m

Working out:

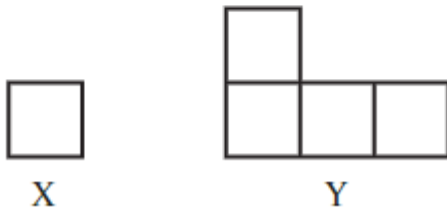


10. The pie chart shows the nationalities of people on a ferry. What angle should be drawn for the UK sector?
- A 10.28°
B 35°
C 126°
D 132°



Working out:

11. In how many ways can you join the square X to shape Y along an edge so that the final shape has line symmetry?
- A 1
B 2
C 3
D 4



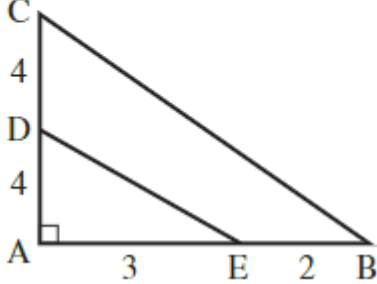
Working out:



12. A roll of wallpaper is 10 m long and 50 cm wide. How many rolls of wallpaper are needed to cover a wall 2.5 m high and 8 m long?
- A** 2
B 3
C 4
D 5

Working out:

13. What fraction of the area of triangle ABC is the area of triangle ADE?
- A** $\frac{1}{4}$
B $\frac{3}{10}$
C $\frac{1}{2}$
D $\frac{3}{5}$



Working out

14. The value of $1^1 \times 2^2 \times 3^3$ is
- A** 30
B 36
C 72
D 108

Working out:



15.	What is the next number in the sequence 6, 13, 27, 55?	A 76 B 84 C 111 D None of the above
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Working out:

16.	Which of the following statements are true? 1. 200 mm = 2 m 2. $\frac{4}{5}$ is greater than $\frac{3}{4}$ 3. All rectangles have four lines of symmetry.	A 1 only B 2 only C 3 only D 2 and 3
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Working out:

17.	Draw triangle ABC in which $AB = AC$. If $\hat{ACB} = 53^\circ$, calculate the size of \hat{ABC} .	A 53° B 64° C 74° D 127°
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Working out:



18. Four 1's are written in the square so that no two 1's are on the same row, column or diagonal. Where must the '1' go in the third column?

		D	
		C	
1		B	
		A	

Working out:

19. A car travels half a mile in a minute. What is its speed?

A $\frac{1}{2}$ mph
B 30 mph
C 60 mph
D 120 mph

Working out:

20. Without a calculator, work out 3.72×0.23

A 0.0856
B 0.7956
C 0.8556
D 8.556

Working out:



END OF SECTION A
MOVE STRAIGHT ONTO SECTION B



SECTION B: PROBLEM-SOLVING QUESTIONS

- | | |
|-----------|---|
| 1. | There are some coins on a table.
One quarter of the coins show heads.
If you turn over two coins, then two thirds show tails.
How many coins are there in total? |
|-----------|---|



2. Your bag of marbles splits and marbles start spilling out. One third roll away too quickly for you to grab. One sixth disappear down a drain. Half of the remaining marbles were picked up and taken by other people. You give one third of what is left to your friend, who helps you pick them up, which leaves you with 6. How many did you have before the split?



3. You and two friends, Micah and Aliya, have had numbers stuck to your foreheads. You are told that the sum of the three numbers is a square number, less than 100. Micah says the two numbers he can see also add to make a square number. Aliyah says the same. The numbers you can see do not – the sum is either four too little or 13 too big.

What numbers do you each have on your foreheads?

TEST COMPLETE



NOW GO BACK AND CHECK YOUR WORK CAREFULLY