

# Year 10 Foundation Maths Practice Paper 3

This paper covers: Percentages, Work with fractions, Non-calculator methods, Algebraic manipulation, Quadratic expressions and equations, Straight line graphs, Graphs and diagrams, Probability, Ratio and scale, Perimeter, area and volume, Vectors.

TIME ALLOWED

**40 minutes**

TOTAL MARKS

**31**

QUESTIONS

**26**

Name \_\_\_\_\_

Class \_\_\_\_\_ Date \_\_\_\_\_

## INSTRUCTIONS

- Use black ink or a black ball-point pen.
- Answer every question in the space given.
- You may use a calculator.
- Show your working. Some marks are given for a correct method, even when the answer is wrong.

## INFORMATION

- The marks for each question are shown in brackets, for example [1 mark].
- The questions start easier and get harder as you go.
- Diagrams are not drawn accurately unless the question says so.
- Check your answers if you have time at the end.

## FOR THE MARKER

Score \_\_\_\_\_ out of 31

Percentage \_\_\_\_\_ %

## 01 Questions

Answer every question. Show your working.

- 1** Write the ratio 10 : 30 in its simplest form. Circle your answer. [1 mark]

☐ 1 : 3

☐ 1 : 4

☐ 3 : 1

- 2** What is  $\frac{7}{10}$  of 80? [1 mark]

ANSWER

- 3**  $\frac{1}{3}$  of a number is 6. What is the number? [1 mark]

ANSWER

- 4** Write  $3\frac{1}{6}$  as a top-heavy fraction. Write your answer as a fraction. [1 mark]

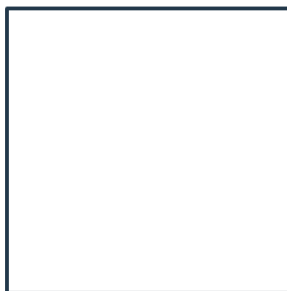
ANSWER

- 5** Expand  $4(2x - 6)$ . [1 mark]

ANSWER

6 What is the name of this flat shape? Circle your answer. [1 mark]

- ☐ isosceles triangle    ☐ square    ☐ pentagon    ☐ hexagon



7 Look at the hundredths column. What do the two digits in it add up to? [1 mark]

$$\begin{array}{r} 56.64 \\ - 23.86 \\ \hline \end{array}$$

A large rectangular area filled with a uniform grid of small dots, intended for drawing a picture related to the text.

ANSWER

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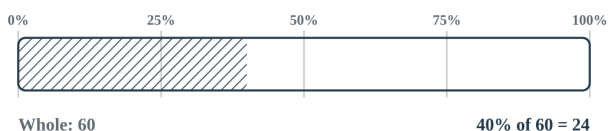
8 Only two sides are marked on this rectangle. How many centimetres is it round the outside? [1 mark]

A large sheet of dot grid paper with a grid of small dots. The dots are arranged in a regular pattern, with 20 columns and 20 rows. The paper has rounded corners and a light gray border.

ANSWER

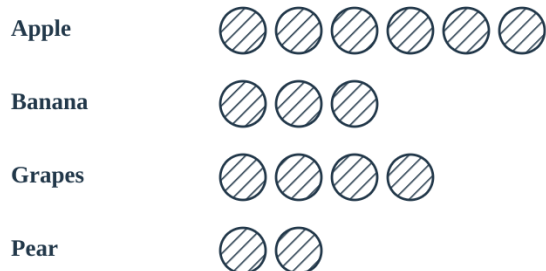
\_\_\_\_\_

- 9 The bar stands for £60, the price before a sale. The filled part is the 40% taken off. What is the sale price? [1 mark]



ANSWER

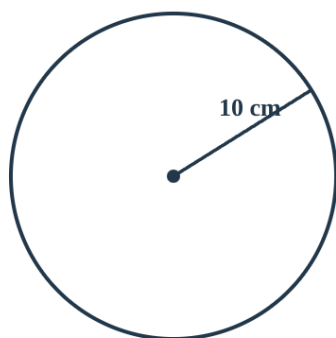
- 10 The chart shows favourite fruit. How many children are in the Pear row? [1 mark]



Key: each circle stands for 5 children

ANSWER

- 11 The line drawn from the centre of this circle is its radius. How long is the diameter, in centimetres? [1 mark]



ANSWER

- 12** A fair dice is rolled. What is the probability of a number greater than 2? Give a fraction in its simplest form. Write your answer as a fraction. [1 mark]

ANSWER

- 13** 37% of a number is 88.8. What is the number? [1 mark]

ANSWER

- 14** The letters B, E, D are written on cards. Two cards are picked one after the other and kept in order. How many different ordered pairs are there? [2 marks]

ANSWER

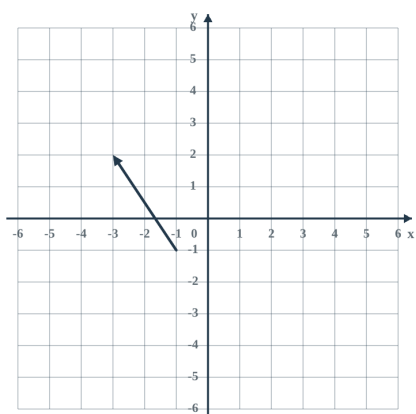
- 15** A trapezium has parallel sides of 4 centimetres and 8 centimetres, and a perpendicular height of 6 centimetres. What is its area in square centimetres? [1 mark]

ANSWER

- 16** A café offers 3 starters, 6 mains and 2 desserts. How many different three-course meals are there? [2 marks]

ANSWER

- 17** Write the arrow as a column vector: along, then up. Use a minus sign for left or down. Write both answers. [1 mark]



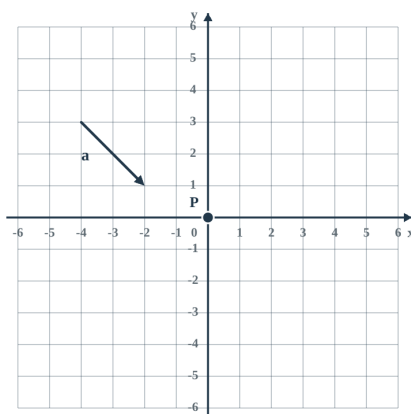
ANSWER

- 18** A 4-sided spinner was spun 40 times. What is the relative frequency of a 1? Give a fraction in its simplest form. Write your answer as a fraction. [1 mark]

| Score | Frequency |
|-------|-----------|
| 1     | 7         |
| 2     | 13        |
| 3     | 12        |
| 4     | 8         |

ANSWER

- 19 The arrow  $a$  is  $(2, -2)$ . Draw  $3a$  from the marked point  $P$ . Draw the vector from the marked point. [1 mark]



- 20 Sam works out  $x^2 + 8$  when  $x = -6$  and gets  $-28$ . What is the correct value? Circle your answer. [1 mark]
- ☐ -4 ☐ 44 ☐ -28

- 21 Hassan expands  $(x + 6)(x + 6)$  and writes  $x^2 + 36$ . What is missing? Circle your answer. [1 mark]
- ☐ The middle terms  $6x$  and  $6x$ , which make  $12x$  ☐ Nothing, the expansion is right
- ☐ A term of  $12x^2$ , from adding the brackets

- 22 A box holds 96 cubes. 3 eighths of them are red and the rest are blue. How many are blue? [3 marks]

ANSWER

- 23 A spinner has three colours. Which list could be the probabilities of all three? Circle your answer. [1 mark]
- ☐ 0.25, 0.25, 0.25 ☐ 0.3, 0.3, 0.3 ☐ 0.35, 0.45, 0.2

- 24 Which line is steeper:  $y = 2x + 1$  or  $y = x + 2$ ? Circle your answer. [1 mark]
- ☐  $y = x + 2$  ☐  $y = 2x + 1$  ☐ They are equally steep

- 25** A price of £200 rises by 25% and later falls by 25%. What is the overall percentage change from the original price? Give a fall as a negative number. [2 marks]

ANSWER

- 26** What is the first thing to do when dividing by a decimal? Circle your answer. [1 mark]

- ☐ Multiply only the number being divided by 10
- ☐ Multiply both numbers by 10 until the divisor is a whole number
- ☐ Move the decimal point in the answer at the end

# Practice Paper 3

## FOR THE MARKER

The marks for every question, the answers to accept and what to award for part of an answer. 31 marks in total.

|                                                                                                                        |                       |           |
|------------------------------------------------------------------------------------------------------------------------|-----------------------|-----------|
| 1                                                                                                                      | 1 : 3                 | [1 mark]  |
| <i>Award the mark for the correct choice only. Two or more choices marked scores no mark.</i>                          |                       |           |
| 2                                                                                                                      | 56                    | [1 mark]  |
| 3                                                                                                                      | 18                    | [1 mark]  |
| 4                                                                                                                      | $\frac{19}{6}$        | [1 mark]  |
| 5                                                                                                                      | $8x - 24$             | [1 mark]  |
| 6                                                                                                                      | square                | [1 mark]  |
| <i>Award the mark for the correct choice only. Two or more choices marked scores no mark.</i>                          |                       |           |
| 7                                                                                                                      | 10                    | [1 mark]  |
| 8                                                                                                                      | 16 cm                 | [1 mark]  |
| 9                                                                                                                      | £36                   | [1 mark]  |
| 10                                                                                                                     | 10                    | [1 mark]  |
| 11                                                                                                                     | 20 cm                 | [1 mark]  |
| 12                                                                                                                     | $\frac{2}{3}$         | [1 mark]  |
| 13                                                                                                                     | 240                   | [1 mark]  |
| 14                                                                                                                     | 6                     | [2 marks] |
| <i>Award 2 marks for the correct answer. Award 1 mark for a correct method with no more than one arithmetic error.</i> |                       |           |
| 15                                                                                                                     | 36 square centimetres | [1 mark]  |
| 16                                                                                                                     | 36                    | [2 marks] |
| <i>Award 2 marks for the correct answer. Award 1 mark for a correct method with no more than one arithmetic error.</i> |                       |           |

|    |                                                                                                                                                                       |           |
|----|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|
| 17 | -2 and 3                                                                                                                                                              | [1 mark]  |
| 18 | $\frac{7}{40}$                                                                                                                                                        | [1 mark]  |
| 19 | 6 along and -6 up<br><i>Award the mark when the drawing or marking matches the answer shown.</i>                                                                      | [1 mark]  |
| 20 | 44<br><i>Award the mark for the correct choice only. Two or more choices marked scores no mark.</i>                                                                   | [1 mark]  |
| 21 | The middle terms $6x$ and $6x$ , which make $12x$<br><i>Award the mark for the correct choice only. Two or more choices marked scores no mark.</i>                    | [1 mark]  |
| 22 | 60<br><i>Award 3 marks for the correct answer. Award 2 marks for a complete method with no more than one arithmetic error. Award 1 mark for a correct first step.</i> | [3 marks] |
| 23 | 0.35, 0.45, 0.2<br><i>Award the mark for the correct choice only. Two or more choices marked scores no mark.</i>                                                      | [1 mark]  |
| 24 | $y = 2x + 1$<br><i>Award the mark for the correct choice only. Two or more choices marked scores no mark.</i>                                                         | [1 mark]  |
| 25 | -6.25 %<br><i>Award 2 marks for the correct answer. Award 1 mark for a correct method with no more than one arithmetic error.</i>                                     | [2 marks] |
| 26 | Multiply both numbers by 10 until the divisor is a whole number<br><i>Award the mark for the correct choice only. Two or more choices marked scores no mark.</i>      | [1 mark]  |

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|              |                 |
|--------------|-----------------|
| <b>Total</b> | <b>31 marks</b> |
|--------------|-----------------|