

- 1 (a) Jenny works out this calculation.

$$6 \div 0.75$$

Rob works out this calculation.

$$6 \div 0.8$$

Whose calculation has the larger answer?

Explain how you can tell this **without doing the calculations**.

..... has the larger answer because

.....

..... [1]

- (b) Peter wrote this as part of his homework.

$$12 \times 0.8 = 21.6$$

Explain how you can tell that his answer is wrong **without doing the calculation**.

.....

..... [1]

2* Arrange the answers to the following in order of size, starting with the smallest.

$\frac{1}{5}$ of 1200

14 squared

3^4

25% of 664

3 (a) Work out $3\frac{2}{5} - \frac{3}{4}$.

Give your answer as a fraction in its simplest form.

(a) _____ [3]

- (b) (i) Work out the reciprocal of 2.5.
Give your answer as a fraction in its simplest form.

(b)(i) _____ [3]

- (ii) Which number has no reciprocal?

(ii) _____ [1]

- 4 One week, a factory produced 2000 cars.
The following week, the factory produced 135% **more** cars.

How many cars did the factory produce that week?

_____ [3]

5 Calculate.

(a) $\frac{13.72 - 8.96}{8.4 \times 6.4}$

Give your answer correct to 3 decimal places.

(a) [2]

(b) $\sqrt{80.2^3 + 250}$

Give your answer correct to the nearest 100.

(b) [2]

6 (a) Calculate.

(i) $\sqrt{28.09^3}$

(a)(i) [1]

(ii) $\frac{3.6 + 9.42}{2.4}$

Give your answer correct to 1 decimal place.

(ii) [2]

(b) Calculate the reciprocal of 2.5.

(b) [1]

(c) Insert brackets to make these calculations correct.

$$7 \times 2 + 6^2 = 400$$

$$6 + 4 \times 2 - 5 = 15$$

[2]

- 7 Julie asked three of her friends to estimate how much of the time it rained during their holidays. Their holidays were all the same length of time.

Eliot 40% of the time

Harpreet $\frac{5}{12}$ of the time

Megan $\frac{3}{8}$ of the time

Put these estimates in order, starting with the smallest.
You must show your method clearly.

..... [4]
smallest

8 One week, Ahmed did a Maths test, an English test and a Science test.

(a) He scored 48 out of 60 in his Maths test.

Write 48 out of 60 as a fraction in its simplest form.

(a) [1]

(b) Ahmed scored 34 out of 40 in his English test.

Work out 34 out of 40 as a percentage.

(b) % [1]

(c) Ahmed scored 54 out of 70 in his Science test.

In which of the three tests did Ahmed do best?
Show your working clearly.

(c) [3]

9 (a) Use your calculator to work these out.

(i) $\sqrt{6} + 1.2^3$
Give your answer correct to 2 decimal places.

(a)(i) _____ [2]

(ii) $\frac{3.7}{4.5 - 1.9}$
Give your answer correct to 2 significant figures.

(ii) _____ [2]

(iii) 2^{-4}
Give your answer as a decimal.

(iii) _____ [1]

(b) A newspaper recorded the attendance at a football match as 6500 correct to the nearest 100.

Write down the upper bound and lower bound of the attendance.

(b) Upper bound _____

Lower bound _____ [2]

10 (a) Calculate.

$$\frac{4.6 + 9.37}{750.81}$$

Give your answer correct to 3 decimal places.

(a) _____ [2]

(b) Insert brackets to make each of these statements correct.

$$2 \times 2 + 6 \times 4 = 64$$

$$2 \times 2 + 6 \times 4 = 40$$

[2]

11 Peter is using the quadratic formula to solve an equation of the

form $ax^2 + bx + c = 0$.

After substituting values and some calculation he arrives at this stage in his working.

$$x = \frac{-5 \pm \sqrt{73}}{4}$$

Work out possible values for a , b and c .

$a =$ _____

$b =$ _____

$c =$ _____ [4]

12 Calculate.

(a) $\sqrt[3]{21.952^2}$

(a) _____ [2]

(b) $\frac{15.6 + 81.97}{4.3 \times 9.84}$

Give your answer correct to 2 decimal places.

(b) _____ [2]

(c) the reciprocal of 1.25

(c) _____ [1]

13 (a) Express $0.\dot{4}\dot{5}$ as a fraction in its lowest terms.

(a) _____ [3]

(b) Hence express $0.0\dot{4}\dot{5}$ as a fraction in its lowest terms.

(b) _____ [1]