

## Foundation Check In - 2.04 Ordering fractions, decimals and percentages

1. Put the following decimals in order of size, from smallest to largest.

$$2.3\% \quad \frac{7}{200} \quad \frac{3}{100} \quad 0.02 \quad \frac{3}{125}$$

2. Put these in order of size, starting with the smallest.

$$-0.2 \quad -\frac{2}{15} \quad -0.21 \quad -\frac{3}{8}$$

3. Write a whole number in the box to make this statement correct.

$$\frac{1}{2} + \frac{1}{\square} < \frac{3}{4}$$

4. Write  $<$ ,  $>$  or  $=$  in the box to make the statement correct.

$$\frac{1}{3} + \frac{2}{5} \square \frac{2}{3}$$

5. Write a fraction that is between  $\frac{3}{5}$  and  $\frac{3}{4}$ .

6. John says there is a 60% chance of scoring 7 or less when you roll two fair six-sided dice together. Complete the scores in the sample space diagram below and use the information to show that John is incorrect.

		FIRST DICE					
		1	2	3	4	5	6
SECOND DICE	1						
	2						
	3						
	4						
	5						
	6						

7. Saskia scored 16 out of 20 in a maths test and 18 out of 25 in a science test. She said that she did better in science. Explain why she is incorrect.

8. Mrs James tested the effect of two different types of fertiliser on the heights of her sunflowers. Fertiliser A caused the height of a sunflower to increase from 40 cm to 66 cm, while fertiliser B caused the height of a sunflower to increase from 45 cm to 72 cm in the same time. Show that fertiliser A caused the greatest percentage increase in height.
9. Write the reciprocals of these numbers in order, starting with the smallest.

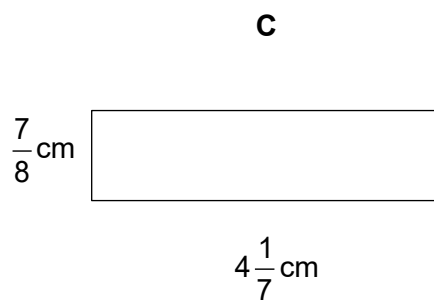
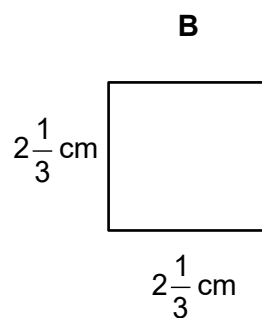
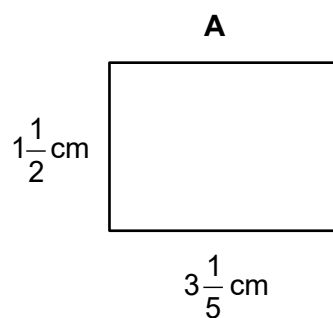
$$\frac{1}{4} \quad 0.3 \quad 5$$

10. Fill in the missing fractions in this sequence. Give your answers in their simplest form.

$$\frac{2}{5}, \quad \frac{7}{10}, \quad \square, \quad 1\frac{3}{10}, \quad \square$$

# GCSE (9–1) **MATHEMATICS**

## Extension



**Not to scale**

List the shapes in order of size of their areas, smallest first.

**Answers**

1.  $0.02$ ,  $2.3\% = 0.023$ ,  $\frac{3}{125} = 0.024$ ,  $\frac{3}{100} = 0.03$ ,  $\frac{7}{200} = 0.035$
2.  $-\frac{3}{8} = -0.375$ ,  $-0.21$ ,  $-0.2$ ,  $-\frac{2}{15} = -0.1\bar{3}$
3. Any number greater than 4
4.  $\frac{1}{3} + \frac{2}{5} = \frac{11}{15}$ ,  $\frac{2}{3} = \frac{10}{15}$  so  $\frac{1}{3} + \frac{2}{5} > \frac{2}{3}$
5.  $\frac{3}{5} = \frac{12}{20}$  and  $\frac{3}{4} = \frac{15}{20}$ . Possible answers include  $\frac{13}{20}$  or  $\frac{14}{20}$ , but any other fraction between is also correct.
6. Chance of scoring 7 or less =  $\frac{21}{36} = \frac{7}{12}$  which is 58.3% not 60% OR  $\frac{6}{10} = \frac{36}{60}$  and  $\frac{7}{12} = \frac{35}{60}$
7. Saskia achieved  $\frac{16}{20} \times 100 = 80\%$  in maths which is a higher percentage than  $\frac{18}{25} \times 100 = 72\%$  in science. Alternatively,  $\frac{16}{20} = \frac{40}{50}$  which is greater than  $\frac{18}{25} = \frac{36}{50}$ .
8. Fertiliser A percentage increase in height is  $\frac{26}{40} \times 100 = 65\%$ , Fertiliser B percentage increase in height is  $\frac{27}{45} \times 100 = 60\%$  so Fertiliser A caused the greatest percentage increase in height.
9.  $5^{-1} = 0.2$ ,  $0.3^{-1} = 3.\bar{3}$ ,  $\left(\frac{1}{4}\right)^{-1} = 4$
10. 1 and  $1\frac{3}{5}$

**Extension**

**C**  $\left(3\frac{5}{8}\right) \text{ cm}^2$    **A**  $\left(4\frac{4}{5}\right) \text{ cm}^2$    **B**  $\left(5\frac{4}{9}\right) \text{ cm}^2$

# GCSE (9–1)

# MATHEMATICS

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# GCSE (9–1)

# MATHEMATICS

Assessment Objective	Qu.	Topic	R	A	G
AO1	1	Order fractions, decimals and percentages			
AO1	2	Order negative fractions and decimals			
AO1	3	Solve an inequality involving fractions			
AO1	4	Compare fractions			
AO1	5	Write a fraction between two fractions			
AO2	6	Change fractions to percentages to compare probabilities			
AO2	7	Equate a fraction and a percentage			
AO2	8	Compare percentage increase			
AO3	9	Compare reciprocals			
AO3	10	Continue a sequence involving fractions			

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