Foundation Check In - 2.01 Fractions

1. Simplify the following fraction as fully as possible. $\frac{8}{12}$

2. Write the following mixed number as an improper fraction. $2\frac{3}{5}$

3. Calculate. $\frac{2}{5} \times \frac{3}{8}$

4. Calculate. $\frac{5}{6} - \frac{3}{4}$

5. Calculate. $\frac{2}{3} \div \frac{3}{5}$

6. Explain why the following calculation is incorrect. $\frac{3}{4} + \frac{1}{5} = \frac{4}{9}$

7. It takes $\frac{4}{5}$ of a bag of cement to produce 10 kg of concrete.
   Simon wants to produce 30 kg of concrete.
   Why would Simon need to buy 3 bags of cement?

8. Is $\frac{2}{5}$ of 9 the same as $\frac{9}{5}$ of 2? Explain your answer.

9. Tom's garden is 60 m^2. He plants vegetables in $\frac{1}{5}$ of the garden and divides the rest equally between patio and grass. How many square metres of patio does he have?

10. Kate and Helen buy a car. Kate pays £1200 and Helen pays the remaining $\frac{3}{4}$ of the total cost. How much does the car cost in total?

Extension

Using the four single digits 2, 5, 7 and 9, calculate the biggest and smallest totals for the following.

$\frac{a}{b} + \frac{c}{d}$ $\frac{a}{b} - \frac{c}{d}$ $\frac{a}{b} \times \frac{c}{d}$ $\frac{a}{b} \div \frac{c}{d}$

Answers

1. $\frac{2}{3}$

2. $\frac{13}{5}$

3. $\frac{3}{20}$

4. $\frac{1}{12}$

5. $\frac{10}{9}$

6. Because they have added the numerators and the denominators together.

7. 3 bags of cement are enough to make 37.5 kg however 2 bags of cement will only make 25 kg; or 30 kg requires $\frac{12}{5}$ bags of cement which is $2\frac{2}{5}$ so 3 bags required.

8. $\frac{2\times9}{5}=\frac{9\times2}{5}$

9. 24 m^2

10. £4800

Extension

$\frac{9}{2}+\frac{7}{5}>\frac{5}{9}+\frac{2}{7}$

$\frac{9}{2}-\frac{5}{7}>\frac{2}{9}-\frac{7}{5}$

$\frac{9}{5}\times\frac{7}{2}>\frac{2}{9}\times\frac{5}{7}$ or $\frac{9}{2}\times\frac{7}{5}>\frac{2}{7}\times\frac{5}{9}$

$\frac{9}{2}\div\frac{5}{7}>\frac{5}{9}\div\frac{7}{2}$ or $\frac{9}{5}\div\frac{2}{7}>\frac{5}{7}\div\frac{9}{2}$ or $\frac{7}{2}\div\frac{5}{9}>\frac{2}{9}\div\frac{7}{5}$ or $\frac{7}{5}\div\frac{2}{9}>\frac{2}{7}\div\frac{9}{5}$

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AO1	1	Simplify a fraction			
AO1	2	Write a mixed number as an improper fraction			
AO1	3	Multiply fractions			
AO1	4	Subtract fractions			
AO1	5	Divide fractions			
AO2	6	Recognise that a common denominator is needed for addition			
AO2	7	Draw a conclusion from a fractional quantity calculation			
AO2	8	Multiply a fraction by an integer			
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