



3.2D Fractions: Fluency and Exam Drill

EDEXCEL Edexcel 1MA1 · Calculator allowed · about 50 minutes

Total Marks

Name: _____ Date: ____ / ____ / ____

Answer ALL questions. Show all your working.

1 Work out $\frac{1}{4} + \frac{1}{2}$.

(Total for Question 1 is 1 mark)

2 Work out $\frac{5}{6} - \frac{1}{3}$.

(Total for Question 2 is 1 mark)

3 Work out $\frac{2}{3} \times \frac{3}{5}$.

(Total for Question 3 is 1 mark)

4 Work out $\frac{3}{5} \div 3$.

(Total for Question 4 is 2 marks)

5 Work out $\frac{7}{8}$ of 24.

(Total for Question 5 is 2 marks)

6 Work out $2\frac{2}{5} + 1\frac{4}{5}$. Give your answer as a mixed number.

(Total for Question 6 is 2 marks)

7 Work out $5\frac{1}{3} - 2\frac{5}{6}$.

(Total for Question 7 is 3 marks)

8 Work out $2 \div \frac{3}{8}$. Give your answer as a mixed number.

(Total for Question 8 is 3 marks)

9 Find $\frac{3}{4}$ of $\frac{2}{5}$ of 100.

(Total for Question 9 is 3 marks)

- 10** A smoothie recipe makes 6 servings and uses $\frac{5}{6}$ litre of milk in total.
- (a) Work out how much milk is used for one serving.
- (b) Work out how much milk is needed to make 9 servings. Give your answer as a mixed number where appropriate.

(a) Work out how much milk is used for one serving. (2)

(b) Work out how much milk is needed to make 9 servings. Give your answer as a mixed number where appropriate. (2)

(Total for Question 10 is 4 marks)

- 11** Sam paints $\frac{3}{5}$ of a fence in the morning. In the afternoon he paints $\frac{1}{4}$ of the remaining part. What fraction of the whole fence has Sam painted by the end of the day?

(Total for Question 11 is 3 marks)

- 12** Work out $\frac{14}{15} - \frac{1}{3}$. Give your answer in simplest form.

(Total for Question 12 is 3 marks)

- 13** Show that $\frac{7}{9} \div \frac{14}{27} = \frac{3}{2}$.

(Total for Question 13 is 4 marks)

- 14** A class completed $\frac{5}{8}$ of a test. Later, $\frac{3}{10}$ of the pupils who had not completed it finished the test. What fraction of the class have now completed the test?

(Total for Question 14 is 3 marks)

- 15** Work out $1\frac{2}{3} \times 2\frac{1}{4}$. Give your answer as a mixed number in simplest form.

(Total for Question 15 is 3 marks)

- 16** Work out $4\frac{1}{2} \div \frac{3}{8}$. Give your answer in simplest form.

(Total for Question 16 is 3 marks)

- 17** A painter makes a mix of paints using $\frac{5}{12}$ red and $\frac{1}{3}$ blue with the rest white. If the total mix is 48 litres, work out how many litres of white paint are used.

(Total for Question 17 is 4 marks)

- 18** Priya has $10 \frac{1}{2}$ metres of ribbon. She cuts off $\frac{1}{4}$ of it. From the remaining ribbon she uses $\frac{3}{5}$ for making bows. How much ribbon remains unused? Give your answer as a mixed number in simplest form.

(Total for Question 18 is 5 marks)

Mark scheme · 3.2D Fractions: Fluency and Exam Drill

Question 1

- **B1** $\frac{3}{4}$ cao
- **Answer:** $\frac{3}{4}$

Question 2

- **B1** $\frac{1}{2}$ cao
- **Answer:** $\frac{1}{2}$

Question 3

- **B1** $\frac{2}{5}$ cao
- **Answer:** $\frac{2}{5}$

Question 4

- **M1** correct method, e.g. $\frac{3}{5} \times \frac{1}{3}$ or showing division by 3 as multiply by $\frac{1}{3}$
- **A1** $\frac{1}{5}$ cao
- **Answer:** $\frac{1}{5}$

Question 5

- **M1** method: $\frac{7}{8} \times 24$ or $(24 \div 8) \times 7$ shown
- **A1** 21 cao
- **Answer:** 21

Question 6

- **M1** convert or add whole and fractions correctly, e.g. $2 + 1$ and $\frac{2}{5} + \frac{4}{5} = \frac{6}{5}$ shown
- **A1** $4 \frac{1}{5}$ cao
- **Answer:** $4 \frac{1}{5}$

Question 7

- **M1** convert to improper fractions or use common denominator, e.g. $5 \frac{1}{3} = \frac{16}{3}$ and $2 \frac{5}{6} = \frac{17}{6}$ shown
- **M1** perform subtraction with common denominator, e.g. $\frac{32}{6} - \frac{17}{6}$ shown
- **A1** $2 \frac{1}{2}$ cao
- **Answer:** $2 \frac{1}{2}$

Question 8

- **M1** use reciprocal: $2 \times \frac{8}{3}$ or equivalent method shown
- **M1** multiply and simplify to improper fraction, e.g. $\frac{16}{3}$ shown
- **A1** $5 \frac{1}{3}$ cao
- **Answer:** $5 \frac{1}{3}$

Question 9

- **M1** multiply fractions: $\frac{3}{4} \times \frac{2}{5}$ shown
- **M1** apply result to 100, e.g. $(\frac{3}{4} \times \frac{2}{5}) \times 100$ shown
- **A1** 30 cao
- **Answer:** 30

Question 10

- (a) **M1** divide $5/6$ by 6 or show $5/6 \times 1/6$
- (a) **A1** $5/36$ litre cao
- (a) **Answer: $5/36$ litre**
- (b) **M1** multiply $5/36$ by 9 or equivalent method shown
- (b) **A1** $1 \frac{1}{4}$ litres cao
- (b) **Answer: $1 \frac{1}{4}$ litres**

Question 11

- **M1** calculate remaining after morning, $1 - 3/5 = 2/5$ and find $1/4$ of this, $1/4 \times 2/5$
- **M1** add morning and afternoon amounts, e.g. $3/5 + 1/10$ shown
- **A1** $7/10$ cao
- **Answer: $7/10$**

Question 12

- **M1** use common denominator, e.g. convert $1/3$ to $5/15$
- **M1** subtract numerators correctly, e.g. $14/15 - 5/15 = 9/15$
- **A1** $3/5$ cao
- **Answer: $3/5$**

Question 13

- **M1** rewrite division as multiplication by reciprocal, e.g. $7/9 \times 27/14$
- **M1** cancel common factors correctly, e.g. $27/9 = 3$ and $7/14 = 1/2$
- **M1** multiply remaining numerators and denominators, e.g. 3×1 over 1×2 or equivalent
- **A1** $3/2$ cao
- **Answer: $3/2$**

Question 14

- **M1** find fraction remaining $1 - 5/8 = 3/8$ and find $3/10$ of that, $3/10 \times 3/8$
- **M1** add new completions to original, e.g. $5/8 + 9/80$
- **A1** $59/80$ cao
- **Answer: $59/80$**

Question 15

- **M1** convert to improper fractions and multiply, e.g. $5/3 \times 9/4$ shown
- **M1** simplify product to improper fraction, e.g. $45/12$ or equivalent
- **A1** $3 \frac{3}{4}$ cao
- **Answer: $3 \frac{3}{4}$**

Question 16

- **M1** convert $4 \frac{1}{2}$ to improper fraction $9/2$
- **M1** divide by $3/8$ using reciprocal: $9/2 \times 8/3$ shown
- **A1** 12 cao
- **Answer: 12**

Question 17

- **M1** convert $1/3$ to twelfths or find combined coloured fraction, e.g. $1/3 = 4/12$ so combined = $9/12$
- **M1** find white fraction $1 - 9/12 = 3/12 = 1/4$
- **M1** multiply $1/4 \times 48$ shown
- **A1** 12 litres cao
- **Answer: 12 litres**

Question 18

- **M1** convert $10 \frac{1}{2}$ to improper fraction $\frac{21}{2}$
- **M1** find amount removed: $\frac{1}{4} \times \frac{21}{2} = \frac{21}{8}$ and find remainder $\frac{21}{2} - \frac{21}{8} = \frac{63}{8}$
- **M1** find amount used for bows: $\frac{3}{5} \times \frac{63}{8} = \frac{189}{40}$
- **M1** subtract used from remainder: $\frac{63}{8} - \frac{189}{40} = \frac{63}{20}$
- **A1** $3 \frac{3}{20}$ cao
- **Answer: $3 \frac{3}{20}$**