

Answer Key — Mixed Numbers & Improper Fractions

Year 4 Mathematics · Number and algebra · WA4MNAFR1

Section A — Fluency (16 marks, 1 mark each)

1. $2 \frac{1}{3}$
2. $2 \frac{1}{4}$
3. $2 \frac{1}{5}$
4. $2 \frac{1}{6}$
5. $2 \frac{2}{3}$
6. $\frac{7}{2}$
7. $\frac{11}{4}$
8. $\frac{13}{3}$
9. $\frac{11}{6}$
10. $3 \frac{1}{3}$
11. $3 \frac{2}{5}$
12. $3 \frac{3}{4}$
13. $\frac{12}{5}$
14. $\frac{11}{2}$
15. $3 \frac{1}{6}$
16. $\frac{18}{5}$

Section B — Core (21 marks)

1. $\frac{11}{4} = 2 \frac{3}{4}$ cups. [3 marks]
2. (a) $3 \frac{1}{2} = \frac{7}{2}$. (b) $\frac{7}{2} \times 400 = 1,400\text{m}$. [2 marks part (a), 2 marks part (b)]
3. $\frac{9}{4} = 2 \frac{1}{4}$ pizzas. [3 marks]
4. (a) $4 \frac{1}{3} = \frac{13}{3}$. (b) $\frac{13}{3} - \frac{2}{3} = \frac{11}{3} = 3 \frac{2}{3}$ metres. [2 marks part (a), 2 marks part (b)]
5. $\frac{17}{5} = 3 \frac{2}{5}$ litres. [3 marks]
6. (a) $5 \frac{1}{2} = \frac{11}{2}$. (b) $\frac{11}{2} \div \frac{1}{2} = 11$ batches. [2 marks part (a), 2 marks part (b)]

Section C — Reasoning (9 marks) — sample responses, award marks for valid reasoning

1. Divide the numerator by the denominator: $13 \div 6 = 2$ remainder 1, so the whole number part is 2 and the remainder (1) becomes the new numerator over the same denominator, giving $2 \frac{1}{6}$. [2 marks]
2. Multiply the whole number by the denominator, then add the numerator, keeping the same denominator: $4 \frac{1}{3} = ((4 \times 3) + 1) / 3 = \frac{13}{3}$. [2 marks]
3. A fraction only needs a numerator larger than its denominator to convert to a mixed number; $\frac{5}{4}$ has numerator 5 greater than denominator 4, so it converts fine to $1 \frac{1}{4}$. [2 marks]
4. The student multiplied the whole number by the numerator (2×3) instead of the denominator; the correct method is $(2 \times 4) + 3 = 11$, giving $\frac{11}{4}$. [3 marks]

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Section D — Challenge (7 marks)

1. $(4 \times 5) + 2 = 22$, so the improper fraction is $22/5$. [2 marks]
2. Any valid pair, e.g. $13/4 = 3 \frac{1}{4}$ and $16/5 = 3 \frac{1}{5}$. [2 marks]
3. The fraction part can be 1, 2, 3, 4 or 5 (since $14 + 6 = 20$ is not less than 20). The largest, 5, gives the improper fraction $19/7$. [2 marks listing, 1 mark correct largest]