Year 9 fractions worksheet

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Name: _____ Date: _____

Question 1

Evaluate, giving each answer as a mixed number:

(a) $2\frac{1}{3} + 1\frac{3}{4}$

(b) $3\frac{1}{5} - 1\frac{2}{3}$

Answer: _____

Question 2

Evaluate, giving each answer in simplest form:

(a) $2\frac{2}{5} \times 1\frac{7}{8}$

(b) $3\frac{3}{4} \div 1\frac{1}{2}$

Answer: _____

Question 3

Evaluate $-\frac{3}{4} + \frac{5}{6} \times (-\frac{2}{5})$, giving your answer as a mixed number.

Answer: _____

Question 4

A water tank is $\frac{2}{3}$ full. After 42 litres are used, the tank is $\frac{3}{8}$ full.

(a) What fraction of the tank's capacity was used?

(b) Find the capacity of the tank.

(c) How many litres are left in the tank?

Answer: _____

Question 5

Evaluate $\frac{5}{6} - \frac{3}{4} \times 2/9$, giving your answer in simplest form.

Answer: _____

Question 6

Calculate each of the following without a calculator. Give fractions in simplest form.

(a) $\frac{2}{3} + \frac{3}{4}$

(b) -⅚ × 9/10

(c) 1½ ÷ (-⅜)

Answer: _____

Year 9 fractions: answers and worked solutions

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Question 1

Key idea: Change mixed numbers to improper fractions, then use a common denominator to add or subtract.

1. (a) 7/3 + 7/4 = 28/12 + 21/12 = 49/12 = 41/12 2. (b) 16/5 - 5/3 = 48/15 - 25/15 = 23/15 = 18/15

Answer: (a) 41/12 (b) 18/15

Question 2

Key idea: Change mixed numbers to improper fractions. To divide, multiply by the reciprocal of the second fraction. Cancel common factors before multiplying.

1. (a) 12/5 × 15/8; cancel 5 into 15 and 4 into 12 and 8: 3/1 × 3/2 = 9/2 = 4½ 2. (b) 15/4 ÷ 3/2 = 15/4 × ⅔ = 30/12 = 5/2 = 2½

Answer: (a) 4½ (b) 2½

Question 3

Key idea: Multiply before adding. A positive times a negative is negative.

1. ⅚ × (-⅖) = -10/30 = -⅓ 2. -¾ - ⅓ = -9/12 - 4/12 = -13/12 3. -13/12 = -11/12

Answer: -11/12

Question 4

Key idea: The fraction used is the difference between the two fractions. That fraction of the capacity equals 42 litres.

1. (a) ⅔ - ⅜ = 16/24 - 9/24 = 7/24 2. (b) 7/24 of the capacity is 42 L, so 1/24 is 42 ÷ 7 = 6 L and the capacity is 24 × 6 = 144 L 3. (c) ⅜ × 144 = 54 L

Answer: (a) 7/24 (b) 144 L (c) 54 L

Question 5

Key idea: Multiply before subtracting.

1. ¾ × 2/9 = 6/36 = ⅙ 2. ⅚ - ⅙ = 4/6 = ⅔

Answer: ⅔

Question 6

Answer: (a) 17/12 (or 15/12) (b) -¾ (c) -4