Year 8 adding and subtracting fractions worksheet

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Name: _____ Date: _____

Question 1

Find ⅔ + ¾. Give your answer as a mixed number.

Answer: _____

Question 2

Evaluate:

(a) -⅔ - (-⅚)

(b) -¾ × (-8/9)

Answer: _____

Question 3

Find 3½ - 1⅘.

Answer: _____

Question 4

Evaluate each expression.

(a) -1½ + ⅖

(b) (-⅖) ÷ (-4/15)

(c) (-½)³

Answer: _____

Question 5

Find 2⅔ × 1⅛.

Answer: _____

Question 6

Find -⅚ + ¼.

Answer: _____

Question 7

Find 4½ ÷ 1⅕.

Answer: _____

Question 8

Calculate, giving each answer as a fraction in simplest form.

(a) -½ + ¾

(b) -⅔ - ⅙

(c) -⅗ × 10/9

(d) -¾ ÷ (-½)

Answer: _____

Question 9

A biscuit recipe uses 2¼ cups of flour for one batch.

(a) How much flour is needed for 3½ batches?

(b) A bag holds 12 cups of flour. How many full batches can be made from one bag?

(c) How much flour is left over after making those batches?

Answer: _____

Question 10

Calculate, giving each answer as a mixed number.

(a) -1½ + 2¾

(b) -2⅓ × 1½

Answer: _____

Year 8 adding and subtracting fractions: answers and worked solutions

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Question 1

Key idea: To add fractions, first write them with a common denominator.

1. The LCD of 3 and 4 is 12 2. 8/12 + 9/12 = 17/12 3. 17/12 = 15/12

Answer: 15/12

Question 2

Key idea: Subtracting a negative is the same as adding its opposite. The product of two negative numbers is positive.

1. (a) -⅔ + ⅚ = -4/6 + ⅚ = ⅙ 2. (b) The signs are the same, so the answer is positive: ¾ × 8/9 = 24/36 = ⅔

Answer: (a) ⅙ (b) ⅔

Question 3

Key idea: Convert mixed numbers to improper fractions, then use a common denominator.

1. 3½ = 7/2 and 1⅘ = 9/5 2. 35/10 - 18/10 = 17/10 3. 17/10 = 17/10

Answer: 17/10

Question 4

Key idea: Use the integer sign rules with fractions: same signs give a positive product or quotient, different signs give a negative one.

1. (a) -3/2 + ⅖ = -15/10 + 4/10 = -11/10 = -11/10 2. (b) Both negative, so the answer is positive: ⅖ × 15/4 = 30/20 = 3/2 = 1½ 3. (c) (-½) × (-½) × (-½): three negatives give a negative, so the answer is -⅛

Answer: (a) -11/10 (b) 1½ (c) -⅛

Question 5

Key idea: Convert to improper fractions, cancel common factors, then multiply numerators and denominators.

1. 2⅔ = 8/3 and 1⅛ = 9/8 2. 8/3 × 9/8 = 1/1 × 3/1 (cancel 8, and 9 with 3) 3. = 3

Answer: 3

Question 6

Key idea: Use a common denominator of 12.

1. -⅚ = -10/12 and ¼ = 3/12 2. -10/12 + 3/12 = -7/12

Answer: -7/12

Question 7

Key idea: To divide by a fraction, multiply by its reciprocal.

1. 4½ = 9/2 and 1⅕ = 6/5 2. 9/2 ÷ 6/5 = 9/2 × ⅚ = 45/12 = 15/4 3. 15/4 = 3¾

Answer: 3¾

Question 8

Answer: (a) ¼ (b) -⅚ (c) -⅔ (d) 3/2 (or 1½)

Question 9

Key idea: Multiply to scale a recipe up; divide to find how many batches fit in the flour available.

1. (a) 2¼ × 3½ = 9/4 × 7/2 = 63/8 = 7⅞ cups 2. (b) 12 ÷ 9/4 = 12 × 4/9 = 48/9 = 5⅓, so 5 full batches 3. (c) 5 batches use 5 × 9/4 = 45/4 = 11¼ cups 4. (c) Left over: 12 - 11¼ = ¾ cup

Answer: (a) 7⅞ cups (b) 5 batches (c) ¾ cup

Question 10

Answer: (a) 1¼ (b) -3½ (-7/3 × 3/2 = -7/2)