Year 8 equivalent fractions worksheet

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Name: _____ Date: _____

Question 1

Write 84/126 in simplest form.

Answer: _____

Question 2

Find the missing numbers to make the fractions equivalent:

$\frac{3}{8} = \frac{\square}{40} = \frac{27}{\square}$

Answer: _____

Question 3

(a) Write 43/7 as an improper fraction.

(b) Write 47/6 as a mixed number.

Answer: _____

Question 4

Write these fractions in ascending order:

$\frac{3}{4}$, $\frac{5}{8}$, 7/12, $\frac{2}{3}$

Answer: _____

Question 5

In a class of 30 students, 18 walk to school, 6 ride a bike and the rest come by car.

(a) What fraction of the class walks to school? Give your answer in simplest form.

(b) Ella says that 12/20 of the class walks. Is her fraction equivalent to your answer to (a)? Explain.

(c) What fraction of the class comes by car, in simplest form?

Answer: _____

Question 6

Find the missing number: $\frac{3}{5} = \frac{}{35}$.

Answer: _____

Question 7

Find the missing number: (28)/() = 4/9.

Answer: _____

Question 8

How many twelfths are equal to ⅚?

Answer: _____

Question 9

Write these fractions in ascending order:

½, 4/7, ⅖, 3/7

Answer: _____

Question 10

Ruby ate ⅜ of a pizza and Sam ate ¼ of the same pizza.

(a) Write Sam's share as an equivalent fraction with a denominator of 8. What is the numerator?

(b) What fraction of the pizza did they eat altogether?

(c) What fraction of the pizza is left?

Answer: _____

Year 8 equivalent fractions: answers and worked solutions

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Question 1

Key idea: Divide the numerator and denominator by their highest common factor.

1. $84 = 2^2 \times 3 \times 7$ and $126 = 2 \times 3^2 \times 7$, so the HCF is $2 \times 3 \times 7 = 42$ 2. $(84 \div 42)/(126 \div 42) = \frac{2}{3}$

Answer: $\frac{2}{3}$

Question 2

Key idea: Equivalent fractions are made by multiplying the numerator and denominator by the same number.

1. $8 \times 5 = 40$, so the numerator is $3 \times 5 = 15$ 2. $3 \times 9 = 27$, so the denominator is $8 \times 9 = 72$

Answer: $\frac{3}{8} = 15/40 = 27/72$

Question 3

Key idea: A whole number of 1 equals 7/7 sevenths or 6/6 sixths, so convert using multiplication and division.

1. (a) $4 \times 7 + 3 = 31$, so $43/7 = 31/7$ 2. (b) $47 \div 6 = 7$ remainder 5, so $47/6 = 7\frac{5}{6}$

Answer: (a) 31/7 (b) $7\frac{5}{6}$

Question 4

Key idea: Write each fraction with the lowest common denominator, then compare numerators.

1. The LCD of 4, 8, 12, 3 is 24 2. $\frac{3}{4} = 18/24$, $\frac{5}{8} = 15/24$, $7/12 = 14/24$, $\frac{2}{3} = 16/24$ 3. In order of numerators: 14, 15, 16, 18

Answer: $7/12, \frac{5}{8}, \frac{2}{3}, \frac{3}{4}$

Question 5

Key idea: A fraction is in simplest form when the numerator and denominator have no common factor other than 1.

1. (a) $18/30 = (18 \div 6)/(30 \div 6) = \frac{3}{5}$ 2. (b) $12/20 = (12 \div 4)/(20 \div 4) = \frac{3}{5}$, so the fractions are equivalent 3. (c) By car: 30 - 18 - 6 = 6 students, and $6/30 = \frac{1}{5}$

Answer: (a) $\frac{3}{5}$ (b) Yes, 12/20 also simplifies to $\frac{3}{5}$ (c) $\frac{1}{5}$

Question 6

Key idea: Multiply the numerator and denominator by the same number.

1. 5 × 7 = 35 2. 3 × 7 = 21

Answer: 21

Question 7

Key idea: Equivalent fractions are made by multiplying the numerator and denominator by the same number.

1. 4 × 7 = 28 2. 9 × 7 = 63

Answer: 63

Question 8

Key idea: Write ⅚ as an equivalent fraction with denominator 12.

1. 6 × 2 = 12, so multiply the numerator by 2 as well 2. ⅚ = 10/12

Answer: 10

Question 9

Key idea: Write each fraction with a common denominator, or as a decimal, then compare.

1. Using the denominator 70: ½ = 35/70, 4/7 = 40/70, ⅖ = 28/70, 3/7 = 30/70 2. In order: 28/70, 30/70, 35/70, 40/70

Answer: ⅖, 3/7, ½, 4/7

Question 10

Key idea: Rewrite both fractions with the same denominator so they can be added.

1. ¼ = 2/8, so the numerator is 2 2. ⅜ + 2/8 = ⅝ 3. 1 - ⅝ = ⅜

Answer: (a) 2 (b) ⅝ (c) ⅜