Equivalent Fractions Example

Equivalent fractions have different numerators and denominators but represent the same value. Multiplying or dividing both parts by the same nonzero number preserves the quotient. To write 3/5 with denominator 20, determine the denominator's scale factor and apply it to the numerator as well.

Example

Write 3/5 with denominator 20.

$$3/5 = ?/20$$

Step-by-step solution

STEP 1

Find the denominator factor

Five must be multiplied by 4 to become 20.

$$5 \times 4 = 20$$

STEP 2

Apply the same factor

Multiply both numerator and denominator by 4.

$$3/5 = (3 \times 4)/(5 \times 4) = 12/20$$

STEP 3

Check by cross products

Equivalent fractions have equal cross products.

$$3 \times 20 = 60; 5 \times 12 = 60$$

ANSWER

3/5 = 12/20

12 and 20 share a greatest common divisor of 4. Dividing both by 4 returns 3/5.

Use this worked example to review the method, then try a similar problem on your own.