

Answers to Lesson 2.1 1-35 odd, 41-43

1) The GCF of the numerator and denominator of a fraction in simplest form is 1.

3) $\frac{3}{7}$ 27) $\frac{2}{5} \cdot \frac{12}{30}$

5) $\frac{2}{5}$ 29) $\frac{3}{5}$

7) $-\frac{5}{8}$ 31) $\frac{1}{5}$

9) $\frac{3}{4}$ 33) $\frac{1}{5}$

11) $-\frac{7}{8}$ 35) $\frac{2}{3}$

13) $\frac{21}{46}$

15) equivalent 41) $\frac{2}{3}$

17) equivalent 43) $\frac{1}{3}$

19) not equivalent

21) equivalent

23) C

25) $\frac{1}{2} \cdot \frac{5}{10}$

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33) $-\frac{18x^2y}{24x}$ Simplify and Evaluate for $x=3, y=5$

$= -\frac{1 \cdot \cancel{2} \cdot 3 \cdot \cancel{3} \cdot x \cdot y}{\cancel{2} \cdot \cancel{2} \cdot \cancel{3} \cdot x}$

$= -\frac{3xy}{4} = -\frac{3(3)(5)}{4} = -\frac{45}{4}$

35) $\frac{6x^3y^2}{21xy^4}$

$= \frac{\cancel{2} \cdot \cancel{3} \cdot x \cdot x \cdot x \cdot y \cdot y}{\cancel{3} \cdot \cancel{7} \cdot x \cdot y \cdot y \cdot y \cdot y}$

$= \frac{2x^2}{7y^2} = \frac{2(3)^2}{7(5)^2} = \frac{18}{175}$

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Warm Up

Using prime factorization, find the Least Common Multiple (LCM) of:

36, 54 75, 30

$36 = 2^2 \cdot 3^2$ $54 = 2 \cdot 3^3$ $75 = 3 \cdot 5^2$ $30 = 2 \cdot 3 \cdot 5$

LCM = $2^2 \cdot 3^3 = 108$ LCM = $2 \cdot 3 \cdot 5^2 = 150$

The least common denominator is the least common multiple of the denominators of two or more fractions.

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2.2 Comparing Fractions and Mixed Numbers

Compare $\frac{2}{3}$ and $\frac{3}{4}$

Find the LCD

$3: 3$
 $4: 2^2$ } $2^2 \cdot 3 = 12$

$\frac{2}{3} \cdot \frac{4}{4} = \frac{8}{12} < \frac{3}{4} \cdot \frac{3}{3} = \frac{9}{12}$

Compare $-\frac{5}{8}$ and $-\frac{7}{12}$

Find the LCD

$8: 2^3$
 $12: 2^2 \cdot 3$ } = LCD = $2^3 \cdot 3$

$-\frac{5}{8} \cdot \frac{3}{3} = -\frac{15}{24} < -\frac{7}{12} \cdot \frac{2}{2} = -\frac{14}{24}$

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On your own, compare:

$\frac{2}{3} < \frac{5}{8}$ $\frac{-8}{9} < \frac{-24}{36}$

LCM = $2^2 \cdot 3^2 = 36$

Write the order of the following, from least to greatest:

$| -5 |, \frac{-15}{16}, -| -3 |, \frac{7}{8}, -(-1), \frac{3}{4}, (-2)$

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