Unit 4 Day 02 Finding Common Denominators Practice

Master E

Before we can begin adding and subtracting rational expressions we need to be able to write common denominators.

Remember this: $\frac{2}{3} + \frac{1}{2} =$

Steps for creating common denominators:
1. Fully factor each denominator and compare the factors of each denominator. Each factor must be represented in the new denominator. If denominators have the same factor, then take the one with the highest power of that factor. For example, if you have 3 fractions and one has a 2 and the other has 4, and the other has an 8, you would compare, 2 to 2^2 to 2^3. You would take 8, which is 2^3 and multiply it by the other factors.
2. Once you have your new denominator, convert your fraction by seeing what the old denominator would multiply by to get the new denominator (what factors are missing).
3. Then multiply both the numerator AND denominator by the missing factors.

1-8: Change the two rational expressions to have common denominators.

1) $\frac{5}{5n^2}$ and $\frac{4m}{3}$

$5n^2 \cdot 3$

$\boxed{15n^2}$

2) $\frac{2n}{3n^2}$ and $\frac{m+4n}{5n}$

$(3)(n^2) \quad (5)n$

$\boxed{15n^2}$

3) $\frac{5y}{6x^3}$ and $\frac{3y}{5xy^2}$

$(2)(3)(x^3) \quad (5) \cdot x \cdot (y^2)$

$\boxed{30x^3y^2}$

4) $\frac{2y}{4x^3}$ and $\frac{2y}{4y}$

$(2^2)(x^3) \quad | \quad 2^2 \, y$

$\boxed{4x^3y}$

5) $\frac{4x}{x+1}$ and $\frac{4x}{x-1}$

$\boxed{(x+1)(x-1)}$

6) $\frac{5x}{x^2-x-6}$ and $\frac{7}{x^2+x-2}$

$(x-3)(x+2) \quad (x+2)(x-1)$

$\boxed{(x-3)(x+2)(x-1)}$

7) $\frac{5k}{2}$ and $\frac{2}{2k^2+4k}$

$2 \qquad 2k(k+2)$

$\boxed{2k(k+2)}$

8) $\frac{8}{1}$ and $\frac{3x}{4x^2+5}$

$1 \qquad 4x^2+5 \qquad \boxed{4x^2+5}$