Review Exercise Set 12

Exercise 1: Perform the indicated operation.

$$\frac{\frac{4}{9}+\frac{11}{36}}{\frac{7}{18}-\frac{5}{6}}=$$

Exercise 2: Perform the indicated operation.

$$\frac{\frac{12xy^2}{7c}}{\frac{3y}{c^2}}=$$

Exercise 3: Perform the indicated operation.

$$\frac{n-\frac{1}{m}}{m^2}=$$

Exercise 4: Perform the indicated operation.

$$\frac{r-\frac{s}{r}}{\frac{s-1}{r}}=$$

Exercise 5: Perform the indicated operation.

$$3-\frac{b}{2-\frac{1}{b}}=$$

Review Exercise Set 12 Answer Key

Exercise 1: Perform the indicated operation.

$$\frac{\frac{4}{9}+\frac{11}{36}}{\frac{7}{18}-\frac{5}{6}}$$

Find LCD between all of the denominators

9 = 3 * 3
36 = **2** * **2** * **3** * **3**
18 = 2 * 3 * 3
6 = 2 * 3

LCD: **2** * **2** * **3** * **3** = 36

Multiply the complex fraction by 36/36

$$=\frac{\frac{4}{9}+\frac{11}{36}}{\frac{7}{18}-\frac{5}{6}}\times\frac{36}{36}$$

Distribute the 36 to each fraction

$$=\frac{\frac{4}{9}\times 36+\frac{11}{36}\times 36}{\frac{7}{18}\times 36-\frac{5}{6}\times 36}$$

Simplify

$$=\frac{(4\times 4)+(11\times 1)}{(7\times 2)-(5\times 6)}$$
$$=\frac{16+11}{14-30}$$
$$=\frac{27}{-16}$$
$$=-\frac{27}{16}$$

Exercise 2: Perform the indicated operation.

$$\frac{\frac{12xy^2}{7c}}{\frac{3y}{c^2}}$$

LCD: $7c^2$

$$= \frac{\frac{12xy^2}{7c}}{\frac{3y}{c^2}} \times \frac{7c^2}{7c^2}$$

$$= \frac{\frac{12xy^2}{7c} \times 7c^2}{\frac{3y}{c^2} \times 7c^2}$$

$$= \frac{12xy^2 \times c}{3y \times 7}$$

$$= \frac{12cxy^2}{21y}$$

$$= \frac{3y \times 4cxy}{3y \times 7}$$

$$= \frac{\cancel{3y} \times 4cxy}{\cancel{3y} \times 7}$$

$$= \frac{4cxy}{7}$$

Exercise 3: Perform the indicated operation.

$$\frac{n-\frac{1}{m}}{m^2}=$$

LCD: m

$$\frac{n-\frac{1}{m}}{m^2}$$

$$=\frac{n-\frac{1}{m}}{m^2}\times\frac{m}{m}$$

$$=\frac{n\times m-\frac{1}{m}\times m}{m^2\times m}$$

$$=\frac{mn-1}{m^3}$$

Exercise 4: Perform the indicated operation.

$$\frac{r-\frac{s}{r}}{\frac{s-1}{r}}$$

LCD: r

$$=\frac{r-\frac{s}{r}}{\frac{s-1}{r}}\times\frac{r}{r}$$

$$=\frac{r\times r-\frac{s}{r}\times r}{\frac{s-1}{r}\times r}$$

$$=\frac{r^2-s}{s-1}$$

Exercise 5: Perform the indicated operation.

$$3-\frac{b}{2-\frac{1}{b}}=$$

LCD: b

$$=3-\frac{b}{2-\frac{1}{b}}$$
$$=3-\frac{b\times b}{2\times b-\frac{1}{b}\times b}$$
$$=3-\frac{b^2}{2b-1}$$

LCD: 2b - 1

$$=\frac{3}{1}\times\frac{2b-1}{2b-1}-\frac{b^2}{2b-1}$$
$$=\frac{6b-3}{2b-1}-\frac{b^2}{2b-1}$$
$$=\frac{6b-3-b^2}{2b-1}$$
$$=\frac{-b^2+6b-3}{2b-1}$$
$$=\frac{-\left(b^2-6b+3\right)}{2b-1}$$
$$=-\frac{b^2-6b+3}{2b-1}$$