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Review Session: Algebraic Fractions

(a) $\frac{a^3}{b^5c^2} \cdot \frac{b^2}{ac^2} = \frac{a^3 \cdot b^2}{b^5c^2 \cdot ac^2} = \frac{\cancel{a}\cdot a \cdot a \cdot \cancel{b} \cdot \cancel{b}}{b \cdot b \cdot b \cdot \cancel{b} \cdot \cancel{b} \cdot c \cdot c \cdot \cancel{a} \cdot c \cdot c}$

$= \frac{a^2}{b^3c^4}$

(b) $\frac{3a}{c^4} \div \frac{9a^2b}{c^5} = \frac{3a}{c^4} \cdot \frac{c^5}{9a^2b} = \frac{\cancel{3} \cdot \cancel{a} \cdot \cancel{c} \cdot \cancel{c} \cdot \cancel{c} \cdot \cancel{c} \cdot c}{\cancel{c} \cdot \cancel{c} \cdot \cancel{c} \cdot \cancel{c} \cdot \cancel{3} \cdot 3 \cdot \cancel{a} \cdot a \cdot b}$

$= \frac{c}{3ab}$

(c) $\frac{(x+2)}{(x-3)} \cdot \frac{(x-3)}{(x+5)} = \frac{(x+2)\cancel{(x-3)}}{\cancel{(x-3)}(x+5)} = \frac{x+2}{x+5}$

(d) $\frac{2}{x} + \frac{3}{x} + \frac{5}{x} = \frac{2+3+5}{x} = \frac{10}{x}$

(e) $\frac{y}{7x} - \frac{3}{7x} = \frac{y-3}{7x}$

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Review Session: Algebraic Fractions

(a) $$\frac{a^3}{b^5c^2}\cdot\frac{b^2}{ac^2} = \frac{a^3\cdot b^2}{b^5c^2\cdot ac^2} = \frac{\cancel{a}\cdot a\cdot a\cdot \cancel{b}\cdot \cancel{b}}{b\cdot b\cdot b\cdot \cancel{b}\cdot \cancel{b}\cdot c\ c\cdot \cancel{a}\cdot c\cdot c}$$

$$= \frac{a^2}{b^3c^4}$$

(b) $$\frac{3a}{c^4}\div\frac{9a^2b}{c^5} = \frac{3a}{c^4}\cdot\frac{c^5}{9a^2b} = \frac{\cancel{3}\cdot\cancel{a}\cdot\cancel{c}\cdot\cancel{c}\cdot\cancel{c}\cdot\cancel{c}\cdot c}{\cancel{c}\cdot\cancel{c}\cdot\cancel{c}\cdot\cancel{c}\cdot\cancel{3}\cdot 3\cdot\cancel{a}\cdot a\cdot b}$$

$$= \frac{c}{3ab}$$

(c) $$\frac{(x+2)}{(x-3)}\cdot\frac{(x-3)}{(x+5)} = \frac{(x+2)\cancel{(x-3)}}{\cancel{(x-3)}(x+5)} = \frac{x+2}{x+5}$$

(d) $$\frac{2}{x}+\frac{3}{x}+\frac{5}{x} = \frac{2+3+5}{x} = \frac{10}{x}$$

(e) $$\frac{y}{7x}-\frac{3}{7x} = \frac{y-3}{7x}$$

(f) $\frac{2}{3x} + \frac{1}{6}$

$$\frac{2 \cdot 2}{3 \cdot x \cdot 2} + \frac{1 \cdot x}{2 \cdot 3 \cdot x}$$

$$\frac{4}{6x} + \frac{x}{6x} = \frac{4+x}{6x} \text{ or } \frac{x+4}{6x}$$

(g) $\frac{2}{5} - \frac{3}{x}$

$$\frac{2}{5} \cdot \frac{x}{x} - \frac{3}{x} \cdot \frac{5}{5}$$

$$\frac{2x}{5x} - \frac{15}{5x} = \frac{2x-15}{5x}$$

(h) $\frac{5x+2}{6y} - \frac{3x+1}{6y} = \frac{5x+2-(3x+1)}{6y}$

$$\frac{5x+2-3x-1}{6y} = \frac{2x+1}{6y}$$

(i) $\dfrac{3yz}{12y} = \dfrac{(z)\cancel{(3y)}}{(4)\cancel{(3y)}} = \dfrac{z}{4}$

(j) $\dfrac{(x+2)\cdot x}{x\cdot(x-3)} = \dfrac{\cancel{(x)}(x+2)}{\cancel{(x)}(x-3)} = \dfrac{x+2}{x-3}$

$\cancel{\dfrac{(x)(+2)}{(x)(-3)}}$

(k) $\dfrac{x}{x-9}$ $\xleftrightarrow{\text{not equal}}$ $\dfrac{(x)(1)}{(x)(-9)}$

Cannot be cancelled

(l) $\dfrac{(x+1)(x+2)}{(x+2)}$ $\xleftrightarrow{\text{equal}}$ $\dfrac{(x+1)\cancel{(x+2)}}{(1)\cancel{(x+2)}} = x+1$

??

(m) $\dfrac{(x-1)-(x-2)}{(x-2)}$ $\cancel{\dfrac{(x-1)(x-2)}{(1)(x-2)}}$

Cannot be cancelled.

How to Complete Review Session Worksheet Activities

These are the steps you will follow for each activity:

1. If you haven't already, please find the file "Review Sessions, Intermediate Algebra, MAT1033C" on my Web site and print it. It is located in Course Materials directly above the pencasts.

2. Read the examples associated with the worksheet you are completing.

3. Complete the Practice problems that follow. Compare your answers to the correct answers at the back.

4. For any practice problems that you got wrong, listen to the complete solution to that Practice problem.

5. Complete the Check Your Understanding problems and put the circled letters together, in order, to spell a word. Send me an email (dlacoste@valenciacollege.edu) with that word and the topic of the worksheet.