Elementary Algebra Skill

Multiplying Rational Expressions

Simplify each expression.

1) $\frac{6n}{10n} \cdot \frac{4n}{10n^3}$

2) $\frac{5p}{9p^3} \cdot \frac{7p^3}{4}$

3) $\frac{b-2}{b-1} \cdot \frac{(b+9)(b-1)}{(b+9)(b-2)}$

4) $\frac{8(7b+4)}{10} \cdot \frac{(b-10)(b+4)}{8(7b+4)}$

5) $\frac{4n-24}{n-6} \cdot \frac{1}{n-9}$

6) $\frac{70-3n-n^2}{n^2+9n-10} \cdot \frac{1}{n-7}$

7) $\frac{15k-50}{3k-10} \cdot \frac{9k}{5}$

8) $\frac{70v-20}{5v+5} \cdot \frac{5v+5}{70v-20}$

9) $\frac{5m^2-13m+8}{m-7} \cdot \frac{1}{5m-8}$

10) $\frac{8-2x}{5} \cdot \frac{45x^3+90x^2}{10x^2-20x-80}$

11) $\frac{20p+80}{p^2-9p+8} \cdot \frac{p-8}{18p+72}$

12) $\frac{r^2+18r+80}{2r+16} \cdot \frac{r+6}{9r^3+54r^2}$

13) $\frac{8x^2-24x}{16x^3-48x^2} \cdot \frac{40x^3+56x^2}{5x^2-43x-70}$

14) $\frac{x-y}{x^2-2xy+y^2} \cdot \frac{x^2+xy-2y^2}{2x^2+5xy+2y^2}$

Answers to Multiplying Rational Expressions

1) $\frac{6}{25n^2}$

2) $\frac{35p}{36}$

3) 1

4) $\frac{(b-10)(b+4)}{10}$

5) $\frac{4}{n-9}$

6) $-\frac{1}{n-1}$

7) $9k$

8) 1

9) $\frac{m-1}{m-7}$

10) $-\frac{9x^2}{5}$

11) $\frac{10}{9(p-1)}$

12) $\frac{r+10}{18r^2}$

13) $\frac{4x}{x-10}$

14) $\frac{1}{2x+y}$