Math 2 Name_____

Math 2 Unit 5.5 Multiply and Divide Rational Expressions Example

Simplify each and state the excluded values.

1) $\frac{3p^2}{8} \cdot \frac{10p^2}{3}$

2) $\frac{9v}{2v^2} \div \frac{7}{5v}$

3) $\frac{9}{3n^3} \cdot \frac{6n}{8n}$

4) $\frac{9}{10} \div \frac{4}{6x}$

5) $\frac{2x}{4} \div \frac{3}{6}$

6) $7x^3 \div \frac{6}{7x}$

7) $\frac{7p-8}{(p-5)(7p-8)} \div \frac{3(p+1)}{3(p+7)(p+1)}$

8) $\frac{3(m-3)(m-1)}{m-2} \div \frac{6(m-1)(m+2)}{2(m+2)}$

9) $\frac{n+2}{2(7n+10)(n+3)} \div \frac{n+5}{2(7n+10)(n+3)}$

10) $\frac{2(a+8)(a-2)}{8a(a-2)} \cdot \frac{7a+4}{(a-8)(7a+4)}$

11) $\dfrac{n+4}{3(n+1)(n+3)} \div \dfrac{3n+5}{3(3n+5)(n+3)}$

12) $(10(x+3)) \div \dfrac{10(7x-6)}{7x-6}$

13) $\dfrac{5}{8x^2-24x} \div \dfrac{1}{8x}$

14) $(25v^2+45v+8) \cdot \dfrac{v+3}{25v^2+45v+8}$

15) $7n^2 \cdot \dfrac{5n+5}{5n^2+25n+20}$

16) $\dfrac{45x^3+27x^2}{9x^2} \cdot \dfrac{7x}{40x^2+24x}$

17) $\dfrac{50x^2-80x}{25x^2-40x} \div \dfrac{60x-50x^2}{5x^2+9x-18}$

18) $\dfrac{3x-10}{30x^2+60x} \cdot \dfrac{40x+80}{9x-30}$

19) $\dfrac{-5n^2+20n-20}{14n^2-38n-72} \cdot \dfrac{14n^2-38n-72}{5n^2+10n-40}$

20) $\dfrac{21n^2+6n}{5n+50} \cdot \dfrac{5n+30}{7n+2}$

21) $\dfrac{50v-40}{45v^3-36v^2} \div \dfrac{2v^2}{2v^3-10v^2}$

22) $\dfrac{10b-40}{30b-70} \div \dfrac{10}{30b-70}$

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Math 2 Unit 5.5 Multiply and Divide Rational Expressions Example

Simplify each and state the excluded values.

1) $\frac{3p^2}{8} \cdot \frac{10p^2}{3}$

$\frac{5p^4}{4}$; None

2) $\frac{9v}{2v^2} \div \frac{7}{5v}$

$\frac{45}{14}$; $\{0\}$

3) $\frac{9}{3n^3} \cdot \frac{6n}{8n}$

$\frac{9}{4n^3}$; $\{0\}$

4) $\frac{9}{10} \div \frac{4}{6x}$

$\frac{27x}{20}$; $\{0\}$

5) $\frac{2x}{4} \div \frac{3}{6}$

x; None

6) $7x^3 \div \frac{6}{7x}$

$\frac{49x^4}{6}$; $\{0\}$

7) $\frac{7p-8}{(p-5)(7p-8)} \div \frac{3(p+1)}{3(p+7)(p+1)}$

$\frac{p+7}{p-5}$; $\left\{5, \frac{8}{7}, -7, -1\right\}$

8) $\frac{3(m-3)(m-1)}{m-2} \div \frac{6(m-1)(m+2)}{2(m+2)}$

$\frac{m-3}{m-2}$; $\{2, -2, 1\}$

9) $\frac{n+2}{2(7n+10)(n+3)} \div \frac{n+5}{2(7n+10)(n+3)}$

$\frac{n+2}{n+5}$; $\left\{-\frac{10}{7}, -3, -5\right\}$

10) $\frac{2(a+8)(a-2)}{8a(a-2)} \cdot \frac{7a+4}{(a-8)(7a+4)}$

$\frac{a+8}{4a(a-8)}$; $\left\{0, 2, 8, -\frac{4}{7}\right\}$

11) $\dfrac{n+4}{3(n+1)(n+3)} \div \dfrac{3n+5}{3(3n+5)(n+3)}$

$\dfrac{n+4}{n+1}; \left\{-1, -3, -\dfrac{5}{3}\right\}$

12) $(10(x+3)) \div \dfrac{10(7x-6)}{7x-6}$

$x+3; \left\{\dfrac{6}{7}\right\}$

13) $\dfrac{5}{8x^2-24x} \div \dfrac{1}{8x}$

$\dfrac{5}{x-3}; \{0, 3\}$

14) $(25v^2+45v+8) \cdot \dfrac{v+3}{25v^2+45v+8}$

$v+3; \left\{-\dfrac{8}{5}, -\dfrac{1}{5}\right\}$

15) $7n^2 \cdot \dfrac{5n+5}{5n^2+25n+20}$

$\dfrac{7n^2}{n+4}; \{-4, -1\}$

16) $\dfrac{45x^3+27x^2}{9x^2} \cdot \dfrac{7x}{40x^2+24x}$

$\dfrac{7}{8}; \left\{0, -\dfrac{3}{5}\right\}$

17) $\dfrac{50x^2-80x}{25x^2-40x} \div \dfrac{60x-50x^2}{5x^2+9x-18}$

$\dfrac{-x-3}{5x}; \left\{0, \dfrac{8}{5}, \dfrac{6}{5}, -3\right\}$

18) $\dfrac{3x-10}{30x^2+60x} \cdot \dfrac{40x+80}{9x-30}$

$\dfrac{4}{9x}; \left\{0, -2, \dfrac{10}{3}\right\}$

19) $\dfrac{-5n^2+20n-20}{14n^2-38n-72} \cdot \dfrac{14n^2-38n-72}{5n^2+10n-40}$

$\dfrac{-n+2}{n+4}; \left\{4, -\dfrac{9}{7}, 2, -4\right\}$

20) $\dfrac{21n^2+6n}{5n+50} \cdot \dfrac{5n+30}{7n+2}$

$\dfrac{3n(n+6)}{n+10}; \left\{-10, -\dfrac{2}{7}\right\}$

21) $\dfrac{50v-40}{45v^3-36v^2} \div \dfrac{2v^2}{2v^3-10v^2}$

$\dfrac{10(v-5)}{9v^2}; \left\{0, \dfrac{4}{5}, 5\right\}$

22) $\dfrac{10b-40}{30b-70} \div \dfrac{10}{30b-70}$

$b-4; \left\{\dfrac{7}{3}\right\}$