Algebra 2 - Task 5.2 Name_____

Multiplying & Dividing Rational Expressions

Date_____ Period____

Multiply each and state the excluded values.

1) $\frac{1}{x-4} \cdot \frac{-x^2+9x-20}{x+2}$

2) $\frac{7}{b^2+5b+4} \cdot \frac{b^2+8b+7}{b+7}$

3) $\frac{9r^2+18r}{r+2} \cdot \frac{1}{r-2}$

4) $\frac{8n}{4n+4} \cdot \frac{4n+4}{10}$

5) $\frac{7a^2-28a}{a-4} \cdot \frac{1}{5a^2}$

6) $\frac{1}{x-5} \cdot \frac{6x-30}{6}$

7) $\frac{1}{v-4} \cdot \frac{v^2-7v+12}{v+3}$

8) $\frac{n-2}{n^2-13n+40}(n-5)$

9) $\frac{k-4}{27k^2+27k}(3k+3)$

10) $\frac{50x^3+10x^2}{50x+10} \cdot \frac{5}{10x^2}$

11) $\frac{1}{x+8} \cdot \frac{18x^2-12x}{3x-2}$

12) $\frac{5n+2}{45n^2+18n}(n-1)$

Divide each and state the excluded values.

13) $\frac{m-4}{3m^2+24m} \div \frac{m-4}{m-6}$

14) $\frac{n^2-9n-10}{n+1} \div \frac{n+3}{n+10}$

15) $\frac{p-7}{8} \div \frac{p+5}{8p+8}$

16) $\frac{4}{20x-12} \div \frac{1}{20x^2-12x}$

17) $(n-6) \div \frac{n^2-9n+18}{3}$

18) $\frac{1}{7b+35} \div \frac{3b}{b^2+11b+30}$

19) $\frac{9r+90}{4} \div \frac{9r+90}{4r^2}$

20) $\frac{x+7}{x+6} \div \frac{6x-60}{x-10}$

21) $\frac{1}{8-5x} \div \frac{5x^2}{15x^2-24x}$

22) $\frac{6a^3+2a^2}{a+3} \div (3a+1)$

23) $\frac{7v+5}{7} \div \frac{14v^2+45v+25}{4v^3+10v^2}$

24) $\frac{3n^2-27n-30}{10n} \div \frac{24n+24}{10n}$

Multiply or divide each and state the excluded values.

25) $\frac{3x^2+6x}{6x^2-3x} \div \frac{x+1}{2x-1}$

26) $\frac{8k^3-16k^2}{k-5} \div \frac{40k^3+16k^2}{5k+2}$

27) $\frac{15p+30}{p+2} \div \frac{15p+30}{p+5}$

28) $\frac{50n}{2n^2+18n+28}(2n+4)$

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Multiply each and state the excluded values.

1) $\frac{1}{x-4} \cdot \frac{-x^2+9x-20}{x+2}$ $\frac{(x-5)\cdot -1}{x+2}$; $\{4, -2\}$

2) $\frac{7}{b^2+5b+4} \cdot \frac{b^2+8b+7}{b+7}$ $\frac{7}{b+4}$; $\{-4, -1, -7\}$

3) $\frac{9r^2+18r}{r+2} \cdot \frac{1}{r-2}$ $\frac{9r}{r-2}$; $\{-2, 2\}$

4) $\frac{8n}{4n+4} \cdot \frac{4n+4}{10}$ $\frac{4n}{5}$; $\{-1\}$

5) $\frac{7a^2-28a}{a-4} \cdot \frac{1}{5a^2}$ $\frac{7}{5a}$; $\{4, 0\}$

6) $\frac{1}{x-5} \cdot \frac{6x-30}{6}$ 1; $\{5\}$

7) $\frac{1}{v-4} \cdot \frac{v^2-7v+12}{v+3}$ $\frac{v-3}{v+3}$; $\{4, -3\}$

8) $\frac{n-2}{n^2-13n+40}(n-5)$ $\frac{n-2}{n-8}$; $\{8, 5\}$

9) $\frac{k-4}{27k^2+27k}(3k+3)$ $\frac{k-4}{9k}$; $\{0, -1\}$

10) $\frac{50x^3+10x^2}{50x+10} \cdot \frac{5}{10x^2}$ $\frac{1}{2}$; $\left\{-\frac{1}{5}, 0\right\}$

11) $\frac{1}{x+8} \cdot \frac{18x^2-12x}{3x-2}$ $\frac{6x}{x+8}$; $\left\{-8, \frac{2}{3}\right\}$

12) $\frac{5n+2}{45n^2+18n}(n-1)$ $\frac{n-1}{9n}$; $\left\{0, -\frac{2}{5}\right\}$

Divide each and state the excluded values.

13) $\frac{m-4}{3m^2+24m} \div \frac{m-4}{m-6}$ $\frac{m-6}{3m(m+8)}$; $\{0, -8, 6, 4\}$

14) $\frac{n^2-9n-10}{n+1} \div \frac{n+3}{n+10}$ $\frac{(n+10)(n-10)}{n+3}$; $\{-1, -10, -3\}$

15) $\frac{p-7}{8} \div \frac{p+5}{8p+8}$ $\frac{(p-7)(p+1)}{p+5}$; $\{-1, -5\}$

16) $\frac{4}{20x-12} \div \frac{1}{20x^2-12x}$ $4x$; $\left\{\frac{3}{5}, 0\right\}$

17) $(n-6) \div \frac{n^2-9n+18}{3}$ $\frac{3}{n-3}$; $\{6, 3\}$

18) $\frac{1}{7b+35} \div \frac{3b}{b^2+11b+30}$ $\frac{b+6}{21b}$; $\{-5, -6, 0\}$

19) $\frac{9r+90}{4} \div \frac{9r+90}{4r^2}$ r^2; $\{0, -10\}$

20) $\frac{x+7}{x+6} \div \frac{6x-60}{x-10}$ $\frac{x+7}{6(x+6)}$; $\{-6, 10\}$

21) $\frac{1}{8-5x} \div \frac{5x^2}{15x^2-24x}$ $-\frac{3}{5x}$; $\left\{\frac{8}{5}, 0\right\}$

22) $\frac{6a^3+2a^2}{a+3} \div (3a+1)$ $\frac{2a^2}{a+3}$; $\left\{-3, -\frac{1}{3}\right\}$

23) $\frac{7v+5}{7} \div \frac{14v^2+45v+25}{4v^3+10v^2}$ $\frac{2v^2}{7}$; $\left\{0, -\frac{5}{2}, -\frac{5}{7}\right\}$

24) $\frac{3n^2-27n-30}{10n} \div \frac{24n+24}{10n}$ $\frac{n-10}{8}$; $\{0, -1\}$

Multiply or divide each and state the excluded values.

25) $\frac{3x^2+6x}{6x^2-3x} \div \frac{x+1}{2x-1}$ $\frac{x+2}{x+1}$; $\left\{0, \frac{1}{2}, -1\right\}$

26) $\frac{8k^3-16k^2}{k-5} \div \frac{40k^3+16k^2}{5k+2}$ $\frac{k-2}{k-5}$; $\left\{5, -\frac{2}{5}, 0\right\}$

27) $\frac{15p+30}{p+2} \div \frac{15p+30}{p+5}$ $\frac{p+5}{p+2}$; $\{-2, -5\}$

28) $\frac{50n}{2n^2+18n+28}(2n+4)$ $\frac{50n}{n+7}$; $\{-7, -2\}$

Algebra 2 - Task 5.2 Name_____

Multiplying & Dividing Rational Expressions

Date_____ Period____

Multiply each and state the excluded values.

1) $\frac{6r}{r+8} \cdot \frac{8r+64}{8}$

2) $\frac{9x^2}{x^2-6x-7} \cdot \frac{4x^3-28x^2}{4x^2}$

3) $\frac{10m}{m-4} \cdot \frac{8m-32}{8m-16}$

4) $\frac{n+8}{6n+48} \cdot \frac{6n+12}{7n}$

5) $\frac{x^2-1}{x-1} \cdot \frac{1}{x-3}$

6) $\frac{7n^2}{n^2-10n+21} \cdot \frac{-n^2+10n-21}{8}$

7) $\frac{6b-18}{b-4} \cdot \frac{1}{b-3}$

8) $\frac{r+7}{r+1} \cdot \frac{r^2+10r+9}{r+9}$

9) $\frac{5x+35}{3x^2+35x+50}(3x+5)$

10) $\frac{1}{a-10} \cdot \frac{5a^2+32a-21}{5a-3}$

11) $\frac{7v}{7v^2+56v}(v-2)$

12) $\frac{21x+12}{7x+4} \cdot \frac{1}{x-2}$

Divide each and state the excluded values.

13) $\frac{1}{p+7} \div \frac{p+4}{8p^2+56p}$

14) $\frac{x-10}{x-7} \div \frac{x^2-x-56}{x^2-49}$

15) $\frac{5k+30}{8k} \div \frac{5}{8k}$

16) $\frac{3n^2}{28n-36} \div \frac{1}{28n^3-36n^2}$

17) $\frac{m+7}{2m^2-16m} \div \frac{1}{m-8}$

18) $4n^2 \div \frac{n^2+12n+20}{n+2}$

19) $\frac{r+4}{r^2-2r+1} \div \frac{1}{r^2-2r+1}$

20) $\frac{x+5}{x^2-8x+15} \div \frac{1}{x-5}$

21) $\frac{8v^3-20v^2}{4v^2} \div \frac{2v-5}{3}$

22) $\frac{9n+9}{27n^3+27n^2} \div \frac{8}{9n^2}$

23) $\frac{b+6}{7b^2+71b+72} \div \frac{1}{7b+8}$

24) $(49x+35) \div \frac{35x^2-31x-40}{5x-8}$

Multiply or divide each and state the excluded values.

25) $\frac{27p-63}{3p-7} \div (p-6)$

26) $\frac{8}{16n+48} \div \frac{n-6}{12n+36}$

27) $\frac{2}{2a-4}(2a^2-20a+32)$

28) $\frac{3k+4}{12k^3+16k^2}(k+1)$

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Multiplying & Dividing Rational Expressions

Date_____ Period____

Multiply each and state the excluded values.

1) $\frac{6r}{r+8} \cdot \frac{8r+64}{8}$ $6r$; $\{-8\}$

2) $\frac{9x^2}{x^2-6x-7} \cdot \frac{4x^3-28x^2}{4x^2}$ $\frac{9x^2}{x+1}$; $\{7, -1, 0\}$

3) $\frac{10m}{m-4} \cdot \frac{8m-32}{8m-16}$ $\frac{10m}{m-2}$; $\{4, 2\}$

4) $\frac{n+8}{6n+48} \cdot \frac{6n+12}{7n}$ $\frac{n+2}{7n}$; $\{-8, 0\}$

5) $\frac{x^2-1}{x-1} \cdot \frac{1}{x-3}$ $\frac{x+1}{x-3}$; $\{1, 3\}$

6) $\frac{7n^2}{n^2-10n+21} \cdot \frac{-n^2+10n-21}{8}$ $-\frac{7n^2}{8}$; $\{7, 3\}$

7) $\frac{6b-18}{b-4} \cdot \frac{1}{b-3}$ $\frac{6}{b-4}$; $\{4, 3\}$

8) $\frac{r+7}{r+1} \cdot \frac{r^2+10r+9}{r+9}$ $r+7$; $\{-1, -9\}$

9) $\frac{5x+35}{3x^2+35x+50}(3x+5)$ $\frac{5(x+7)}{x+10}$; $\left\{-10, -\frac{5}{3}\right\}$

10) $\frac{1}{a-10} \cdot \frac{5a^2+32a-21}{5a-3}$ $\frac{a+7}{a-10}$; $\left\{10, \frac{3}{5}\right\}$

11) $\frac{7v}{7v^2+56v}(v-2)$ $\frac{v-2}{v+8}$; $\{0, -8\}$

12) $\frac{21x+12}{7x+4} \cdot \frac{1}{x-2}$ $\frac{3}{x-2}$; $\left\{-\frac{4}{7}, 2\right\}$

Divide each and state the excluded values.

13) $\frac{1}{p+7} \div \frac{p+4}{8p^2+56p}$ $\frac{8p}{p+4}$; $\{-7, 0, -4\}$

14) $\frac{x-10}{x-7} \div \frac{x^2-x-56}{x^2-49}$ $\frac{x-10}{x-8}$; $\{7, -7, 8\}$

15) $\frac{5k+30}{8k} \div \frac{5}{8k}$ $k+6$; $\{0\}$

16) $\frac{3n^2}{28n-36} \div \frac{1}{28n^3-36n^2}$ $3n^4$; $\left\{\frac{9}{7}, 0\right\}$

17) $\frac{m+7}{2m^2-16m} \div \frac{1}{m-8}$ $\frac{m+7}{2m}$; $\{0, 8\}$

18) $4n^2 \div \frac{n^2+12n+20}{n+2}$ $\frac{4n^2}{n+10}$; $\{-2, -10\}$

19) $\frac{r+4}{r^2-2r+1} \div \frac{1}{r^2-2r+1}$ $r+4$; $\{1\}$

20) $\frac{x+5}{x^2-8x+15} \div \frac{1}{x-5}$ $\frac{x+5}{x-3}$; $\{5, 3\}$

21) $\frac{8v^3-20v^2}{4v^2} \div \frac{2v-5}{3}$ 3; $\left\{0, \frac{5}{2}\right\}$

22) $\frac{9n+9}{27n^3+27n^2} \div \frac{8}{9n^2}$ $\frac{3}{8}$; $\{0, -1\}$

23) $\frac{b+6}{7b^2+71b+72} \div \frac{1}{7b+8}$ $\frac{b+6}{b+9}$; $\left\{-9, -\frac{8}{7}\right\}$

24) $(49x+35) \div \frac{35x^2-31x-40}{5x-8}$ 7; $\left\{\frac{8}{5}, -\frac{5}{7}\right\}$

Multiply or divide each and state the excluded values.

25) $\frac{27p-63}{3p-7} \div (p-6)$ $\frac{9}{p-6}$; $\left\{\frac{7}{3}, 6\right\}$

26) $\frac{8}{16n+48} \div \frac{n-6}{12n+36}$ $\frac{6}{n-6}$; $\{-3, 6\}$

27) $\frac{2}{2a-4}(2a^2-20a+32)$ $2(a-8)$; $\{2\}$

28) $\frac{3k+4}{12k^3+16k^2}(k+1)$ $\frac{k+1}{4k^2}$; $\left\{0, -\frac{4}{3}\right\}$