

MULTIPLY → FACTOR ALL!
→ CANCEL LIKE FACTORS!

DIVIDE → K C F
e h a n g e
P P
then FACTOR!
CANCEL!

Math 3

Name _____

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Multiplying and Dividing Rational Expressions

Simplify each expression.

1) $\frac{x^2 - 7x + 12}{3 - x} \cdot \frac{1}{18x^3}$

2) $\frac{12a}{10} \cdot \frac{10}{a-7} = \frac{12a}{(a-7)}$

3) $\frac{7}{7v^2 + 63v} \cdot \frac{7v^2 + 63v}{v-5}$

4) $\frac{9r+72}{9} \cdot \frac{7}{r+8} = \frac{9(r+8) \cdot 7}{9(r+8)} = 7$

5) $\frac{16a-8}{10} \cdot \frac{10}{6a^2-3a}$

6) $\frac{n-1}{6n^2} \cdot \frac{n+8}{6n-6} = \frac{(n-1)(n+8)}{6n^2 \cdot 6(n-1)} = \frac{n+8}{36n^2}$

7) $\frac{8x}{7} \cdot \frac{7x-49}{x-7}$

8) $\frac{9r^2 - 72r}{2r^2} \cdot \frac{2r^2}{9r}$

9) $\frac{3n+9}{n-4} \cdot \frac{1}{n+3}$

10) $\frac{3}{3k+12} \cdot \frac{(k-1)(k+4)}{k^2+3k-4} = \frac{3(k-1)(k+4)}{3(k+4) \cdot 2} = \frac{(k-1)}{2}$

11) $\frac{27r+72}{9} \div \frac{12r+32}{r+1}$

13-39
ODDS

* 12) $\frac{x^2+x-30}{x+3} \div \frac{5x+30}{x+3}$

KCF $\frac{x^2+x-30}{x+3} \cdot \frac{x+3}{5x+30}$

* 14) $\frac{6a+60}{a-4} \div \frac{6a+60}{6}$

KCF

$= \frac{(x-5)(x+6) \cdot (x+3)}{x+3 \cdot 5(x+6)} = \frac{x-5}{5}$

13) $\frac{1}{k^2-10k+24} \div \frac{k+10}{k^2+19k+90}$

* 16) $\frac{m+5}{m^2+2m-15} \div \frac{1}{m+5}$

KCF $\frac{m+5}{(m-3)(m+5)} \cdot \frac{m+5}{m+5} = \frac{m+5}{m-3}$

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

15) $\frac{10r^2}{10r^3-10r^2} \div \frac{1}{6r^2}$

17) $\frac{v+10}{4v^2} \div \frac{40v-32}{32-40v}$

18) $\frac{v-5}{2v+10} \div \frac{v-5}{v+5}$

19) $\frac{n-9}{n-5} \div \frac{n-9}{7n-35}$

20) $\frac{r+6}{r^2+16r+60} \div \frac{1}{r-6}$

21) $\frac{35k+28}{k-4} \div \frac{35k+28}{5}$

22) $\frac{12r-32}{5r-3} \cdot \frac{5r-3}{3r-8}$