

Advanced Algebra with Trig  
8.4 Opener

Name: *key*  
Period:

Perform the indicated operation and simplify:

$$1) \frac{4x^2 - 8x}{5x + 15} \div \frac{x - 2}{x + 3}$$

$$\frac{4x(x-2)}{5(x+3)} \cdot \frac{(x+3)}{(x-2)}$$

$$\frac{4x \cancel{(x-2)}}{5(x+3)} \cdot \frac{\cancel{(x+3)}}{\cancel{(x-2)}}$$

$$\boxed{\frac{4x}{5}}$$

$$2) \frac{x^2 - 3x - 10}{x^2 + 4x + 3} \cdot \frac{x^2 + 2x - 3}{x^2 + x - 2}$$

$$\frac{(x-5)\cancel{(x+2)}}{(x+3)(x+1)} \cdot \frac{(x+3)\cancel{(x-1)}}{(x+2)\cancel{(x-1)}}$$

$$\boxed{\frac{x-5}{x+1}}$$

$$3) \frac{m^3 - 20}{m - 3} \Rightarrow m - 3 = 0$$

$$m = 3$$

$$\begin{array}{r|rrr|r} 3 & 1 & 0 & 0 & -20 \\ & \downarrow & 3 & 9 & 27 \\ \hline & & 1 & 3 & 9 & 7 \end{array}$$

$$\boxed{m^2 + 3m + 9 + \frac{7}{m-3}}$$

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