

Must show all steps and all work to earn full credit.

Perform the indicated operation and express in lowest terms.

$$1) \frac{k^2 + 12k + 32}{k^2 + 13k + 40} \cdot \frac{k^2 + 5k}{k^2 + 6k + 8}$$

Perform the indicated operation and express in lowest terms.

$$2) \frac{4r - 12}{6r^2 + 12r} \cdot \frac{3r + 6}{24 - 8r}$$

Perform the indicated operation and express in lowest terms.

$$3) \frac{z^2 + 13z + 36}{z^2 + 16z + 63} \div \frac{z^2 + 4z}{z^2 + 2z - 35}$$

$$4) \frac{m^2 - 7m}{m - 2} + \frac{10}{m - 2}$$

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