

Rational Functions

Factor each expression. State the ordered pair of any holes. Write the equation for any vertical asymptotes.

$$1) \frac{30}{18x - 24}$$

$$2) \frac{45x}{25x + 40}$$

$$3) \frac{n + 8}{2n^2 + 16n}$$

$$4) \frac{7n + 7}{n + 1}$$

$$5) \frac{80}{70v - 80}$$

$$6) \frac{k^2 - 18k + 81}{7k^2 - 63k}$$

$$7) \frac{p^2 - p - 12}{3p^3 + 9p^2}$$

$$8) \frac{r^2 + r - 42}{r^2 + 16r + 63}$$

$$9) \frac{6m^3 - 60m^2}{m^2 - 2m - 80}$$

$$10) \frac{6k^2 - 30k}{k^2 - 11k + 30}$$

$$11) \frac{x^2 - 8x - 20}{x^2 - 2x - 8}$$

$$12) \frac{49r^2 - 7r}{35r^2 + 63r}$$

$$13) \frac{x^2 + 6x + 8}{x^2 - 5x - 14}$$

$$14) \frac{x^2 + 8x - 20}{x^2 + 13x + 30}$$

$$15) \frac{2x - 4}{x^2 + 6x - 16}$$

$$16) \frac{r^2 + 3r + 2}{r^2 - r - 2}$$

$$17) \frac{3b^2 - 18b - 81}{b^2 - 16b + 63}$$

$$18) \frac{2r^3 - 2r^2 - 112r}{24 + 5r - r^2}$$