

## Algebra 1.5

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**Simplify each expression.**

1) 
$$\frac{p^2 - 2p - 8}{p + 2} \cdot \frac{1}{p + 2}$$

2) 
$$\frac{5x^2}{10x^3 + 25x^2} \div \frac{x - 2}{6x + 15}$$

3) 
$$\frac{4n^2 + 8n}{n + 2} \cdot \frac{1}{n + 4}$$

4) 
$$\frac{1}{r + 5} \div \frac{2r^3 + 2r^2}{r^2 + 9r + 20}$$

5) 
$$\frac{56n + 24}{8} \div \frac{35n + 15}{7}$$

6) 
$$\frac{v + 3}{v^2 - 3v - 18} \div \frac{1}{18 + 3v - v^2}$$

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

$$8) \frac{n+2}{n-6} \div \frac{7n^2}{7n^3+28n^2}$$

$$9) \frac{1}{k+4} \cdot \frac{3k+15}{k+5}$$

$$10) \frac{2x}{x+4} \div \frac{x-5}{20+x-x^2}$$

$$11) \frac{5}{35x+7} \div \frac{5x-15}{25x+5}$$

$$12) \frac{10a^2-53a+36}{5a^2+11a-12} \cdot \frac{3a^2-4a+1}{6a^2-29a+9}$$

$$13) \frac{2r-14}{6r+6} \div \frac{1}{3r^2+21r+18}$$

$$14) \frac{7k-10}{7k-35} \div \frac{56k^3-80k^2}{7k+63}$$

$$15) \frac{12 - 2x - 14x^2}{2x^2 - 2x - 4} \cdot \frac{18x^2 - 54x}{21x^2 - 81x + 54}$$

$$16) \frac{7x}{2x^2 + 26x + 80} \cdot \frac{2x^2 + 16x + 30}{7x^2 - 28x}$$

$$17) \frac{2m^2 - m - 45}{10} \cdot \frac{10m + 50}{20m + 90}$$

$$18) \frac{3p - 6}{p^2 + 9p + 20} \cdot \frac{14p^2 + 63p}{6p^2 + 15p - 54}$$

$$19) \frac{42n^2 - 36n}{2n^2 - 12n + 16} \div \frac{42n^2 - 36n}{14n^2 - 28n}$$

$$20) \frac{3}{42n^2 - 48n} \div \frac{8n + 24}{56n - 64}$$