

Dividing Rational Expressions

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Simplify each and state the excluded values.

1)
$$\frac{n^2 + 3n - 70}{4n^3 + 4n^2} \div \frac{n + 4}{4n^3 + 4n^2}$$

2)
$$\frac{x^2 - 4x - 21}{4x + 12} \div \frac{x - 10}{4x - 40}$$

3)
$$\frac{k^2 + 11k + 28}{k^2 + 5k - 14} \div \frac{7k + 28}{k^2 + 3k - 10}$$

4)
$$\frac{k^2 + 9k + 18}{k + 3} \div \frac{k^2 - 36}{4k^3 - 24k^2}$$

5)
$$\frac{14a^2 - 14a}{4a + 6} \div \frac{14a^2 - 14a}{14a^3 + 21a^2}$$

6)
$$\frac{49n^2 - 49n}{70n - 50} \div \frac{49n^2 - 49n}{49n - 35}$$

7)
$$\frac{x - 8}{3x^3 - 21x^2} \div \frac{x^2 - 64}{10x + 80}$$

8)
$$\frac{n^2 + 7n - 8}{n + 7} \div \frac{n^2 + n - 56}{n^2 + 4n - 21}$$

9)
$$\frac{v^2 - 13v + 36}{20v^2 - 16v} \div \frac{3}{15v - 12}$$

10)
$$\frac{v + 3}{3v^2 + 9v} \div \frac{24v}{3v^2 - 18v}$$

$$11) \frac{5n - 40}{n - 7} \div \frac{n^2 - 13n + 40}{n^2 - 12n + 35}$$

$$12) \frac{n^2 - 11n + 28}{70n} \div \frac{n^2 - 11n + 28}{n + 4}$$

$$13) \frac{25p - 20}{20p - 16} \div \frac{p + 1}{5p + 5}$$

$$14) \frac{4b^2}{4b + 8} \div \frac{b - 7}{b^2 - 5b - 14}$$

$$15) \frac{6a - 18}{2} \div \frac{4a - 12}{2a - 10}$$

$$16) \frac{3n - 27}{n^2 - 14n + 45} \div \frac{n + 4}{n^2 - 12n + 35}$$

$$17) \frac{n^2 + 7n + 12}{2n + 6} \div \frac{3n}{3n^2 + 24n}$$

$$18) \frac{6x + 30}{x^2 - x - 30} \div \frac{8x - 56}{x^2 - 13x + 42}$$

$$19) \frac{a - 6}{24a - 16} \div \frac{3a - 18}{27a - 18}$$

$$20) \frac{5n - 30}{5n^3 - 30n^2} \div \frac{9n + 81}{5n^2}$$