

## Practice - Multiply / Divide Rational Expressions

Simplify each expression.

1)  $\frac{8x^2}{9} \cdot \frac{9}{2}$

3)  $\frac{9n}{2n} \cdot \frac{7}{5n}$

5)  $\frac{5x^2}{4} \cdot \frac{6}{5}$

7)  $\frac{7(m-6)}{m-6} \cdot \frac{5m(7m-5)}{7(7m-5)}$

9)  $\frac{7r}{7r(r+10)} \div \frac{r-6}{(r-6)^2}$

11)  $\frac{25n+25}{5} \cdot \frac{4}{30n+30}$

13)  $\frac{x-10}{35x+21} \div \frac{7}{35x+21}$

15)  $\frac{x^2-6x-7}{x+5} \cdot \frac{x+5}{x-7}$

17)  $\frac{8k}{24k^2-40k} \div \frac{1}{15k-25}$

19)  $(n-8) \cdot \frac{6}{10n-80}$

21)  $\frac{4m+36}{n+9} \cdot \frac{m-5}{5m^2}$

23)  $\frac{3x-6}{12x-24}(x+3)$

25)  $\frac{b+2}{40b^2-24b}(5b-3)$

27)  $\frac{n-7}{6n-12} \cdot \frac{12-6n}{n^2-13n+42}$

29)  $\frac{27a+36}{9a+63} \div \frac{6a+8}{2}$

31)  $\frac{x^2-12x+32}{x^2-6x-16} \cdot \frac{7x^2+14x}{7x^2+21x}$

33)  $(10m^2+100m) \cdot \frac{18m^3-36m^2}{20m^2-40m}$

35)  $\frac{7p^2+25p+12}{6p+48} \cdot \frac{3p-8}{21p^2-44p-32}$

37)  $\frac{10b^2}{30b+20} \cdot \frac{30b+20}{2b^2+10b}$

39)  $\frac{7r^2-53r-24}{7r+2} \div \frac{49r+21}{49r+14}$

2)  $\frac{8x}{3x} \div \frac{4}{7}$

4)  $\frac{9m}{5m^2} \cdot \frac{7}{2}$

6)  $\frac{10p}{5} \div \frac{8}{10}$

8)  $\frac{7}{10(n+3)} \div \frac{n-2}{(n+3)(n-2)}$

10)  $\frac{6x(x+4)}{x-3} \cdot \frac{(x-3)(x-6)}{6x(x-6)}$

12)  $\frac{9}{b^2-b-12} \div \frac{b-5}{b^2-b-12}$

14)  $\frac{v-1}{4} \cdot \frac{4}{v^2-11v+10}$

16)  $\frac{1}{a-6} \cdot \frac{8a+80}{8}$

18)  $\frac{p-8}{p^2-12p+32} \div \frac{1}{p-10}$

20)  $\frac{x^2-7x+10}{x-2} \cdot \frac{x+10}{x^2-x-20}$

22)  $\frac{2r}{r+6} \div \frac{2r}{7r+42}$

24)  $\frac{2n^2-12n-54}{n+7} \div (2n+6)$

26)  $\frac{21v^2+16v-16}{3v+4} \div \frac{35v-20}{v-9}$

28)  $\frac{x^2+11x+24}{6x^3+18x^2} \cdot \frac{6x^3+6x^2}{x^2+5x-24}$

30)  $\frac{k-7}{k^2-k-12} \cdot \frac{7k^2-28k}{8k^2-56k}$

32)  $\frac{9x^3+54x^2}{x^2+5x-14} \cdot \frac{x^2+5x-14}{10x^2}$

34)  $\frac{n-7}{n^2-2n-35} \div \frac{9n+54}{10n+50}$

36)  $\frac{7x^2-66x+80}{49x^2+7x-72} \div \frac{7x^2+39x-70}{49x^2+7x-72}$

38)  $\frac{35n^2-12n-32}{49n^2-91n+40} \cdot \frac{7n^2+16n-15}{5n+4}$

40)  $\frac{12x+24}{10x^2+34x+28} \cdot \frac{15x+21}{5}$



Beginning and Intermediate Algebra by Tyler Wallace is licensed under a Creative Commons Attribution 3.0 Unported License. (<http://creativecommons.org/licenses/by/3.0/>)

## Answers - Multiply and Divide Rational Expressions

- |                       |                           |                          |
|-----------------------|---------------------------|--------------------------|
| 1) $4x^2$             | 15) $x + 1$               | 29) $\frac{1}{a+7}$      |
| 2) $\frac{14}{3}$     | 16) $\frac{a+10}{a-6}$    | 30) $\frac{7}{8(k+3)}$   |
| 3) $\frac{63}{10n}$   | 17) 5                     | 31) $\frac{x-4}{x+3}$    |
| 4) $\frac{63}{10m}$   | 18) $\frac{p-10}{p-4}$    | 32) $\frac{9(x+6)}{10}$  |
| 5) $\frac{3x^5}{2}$   | 19) $\frac{3}{5}$         | 33) $9m^2(m+10)$         |
| 6) $\frac{5p}{2}$     | 20) $\frac{x+10}{x+4}$    | 34) $\frac{10}{9(n+6)}$  |
| 7) $5m$               | 21) $\frac{4(m-5)}{5m^2}$ | 35) $\frac{p+3}{6(p+8)}$ |
| 8) $\frac{7}{10}$     | 22) 7                     | 36) $\frac{x-8}{x+7}$    |
| 9) $\frac{r-6}{r+10}$ | 23) $\frac{x+3}{4}$       | 37) $\frac{5b}{b+5}$     |
| 10) $x + 4$           | 24) $\frac{n-9}{n+7}$     | 38) $n + 3$              |
| 11) $\frac{2}{3}$     | 25) $\frac{b+2}{8b}$      | 39) $r - 8$              |
| 12) $\frac{9}{b-5}$   | 26) $\frac{v-9}{5}$       | 40) $\frac{18}{5}$       |
| 13) $\frac{x-10}{7}$  | 27) $-\frac{1}{n-6}$      |                          |
| 14) $\frac{1}{v-10}$  | 28) $\frac{x+1}{x-3}$     |                          |



Beginning and Intermediate Algebra by Tyler Wallace is licensed under a Creative Commons Attribution 3.0 Unported License. (<http://creativecommons.org/licenses/by/3.0/>)