

Chapter 6 Prerequisite Skills

1. Determine each product.

a) $(3)\left(\frac{1}{2}\right)$

b) $(6)\left(\frac{1}{2}\right)$

c) $(2)\left(\frac{6}{5}\right)$

d) $\left(\frac{3}{8}\right)\left(\frac{2}{3}\right)$

e) $\left(\frac{3}{7}\right)\left(\frac{1}{6}\right)$

f) $\left(\frac{3}{4}\right)\left(\frac{4}{9}\right)$

2. Express each product as an improper fraction.

a) $\left(1\frac{1}{3}\right)\left(\frac{3}{4}\right)$

b) $\left(2\frac{1}{3}\right)\left(2\frac{1}{3}\right)$

c) $\left(2\frac{3}{7}\right)\left(1\frac{2}{3}\right)$

d) $\left(\frac{3}{5}\right)\left(2\frac{4}{13}\right)$

3. Determine each quotient.

a) $\frac{1}{5} \div 2$

b) $\frac{1}{4} \div 2$

c) $\frac{2}{3} \div 6$

d) $\frac{1}{4} \div \frac{1}{3}$

e) $1\frac{3}{5} \div \frac{9}{10}$

f) $1\frac{5}{12} \div 2\frac{3}{4}$

4. Simplify.

a) $\frac{3}{4} - \left(\frac{1}{2}\right)\left(\frac{2}{3}\right)$

b) $2\frac{1}{5} \div \left(\frac{4}{5} - \frac{1}{4}\right)$

c) $\left(\frac{5}{6} + \frac{2}{3}\right)\left(\frac{3}{7}\right)$

d) $\left(1\frac{2}{5}\right)\left(2\frac{1}{2}\right) \div (1)\left(2\frac{1}{8} - \frac{2}{3}\right)$

5. Multiply using the distributive property.

a) $(x + 5)(x - 2)$

b) $(c - d)(c + d)$

c) $(x - 3)^2$

d) $(4j + 2k)(6j - 3k)$

6. Multiply. Then, combine like terms.

a) $(4n + 2) + (2n - 3)(3n - 2)$

b) $(f + 7)(2f - 4) - (3f + 1)^2$

c) $(b - 2d) + (5b - 3d) + (b + d)(4b + d)$

d) $(4x - 2)(3x - 5) + 2(7x + 5)(2x - 6)$

7. Identify the least common multiple of each pair of numbers.

a) 12 and 15

b) 18 and 32

c) 20 and 25

d) 49 and 3

8. Identify the least common multiple of each pair of terms.

a) $2x$ and $3x^2$

b) $3y$ and $4xy$

c) $\frac{x^2}{2}$ and $\frac{3}{4}$

d) rs^2 and s^3t

9. Factor the following polynomials.

a) $3y(y - 2) + 4(y - 2)$

b) $5a(a - 4) - 2(4 - a)$

c) $3x^2 - 9x - 8x + 24$

d) $2y^4 + y^3 - 10y - 5$

10. Factor, if possible.

a) $x^2 + 7x + 10$

b) $2r^2 - 14rs + 24s^2$

c) $4x^2 - 11x + 6$

d) $2m^2 + 3m - 9$

e) $12q^2 + 17q + 6$

f) $a^2 + 11ab + 24b^2$

11. Factor completely.

a) $b^2 - 121$

b) $4t^2 - 100$

c) $10x^3y - 90xy$

d) $18x^3 + 24x^2 + 8x$

e) $x^4 - 16$

f) $x^4 - 18x^2 + 81$

