

**EXERCISE A**

Determine whether each expression is a polynomial (yes or no).  
If it is, state the degree of the polynomial.

1)  $2a + 5b$                       2)  $\frac{1}{3}x^3 - 9y$                       3)  $\frac{mw^2 - 3}{nz^3 + 1}$                       4)  $c^4 - 4\sqrt{c} + 18$

Simplify.

5)  $(2a + 3b) + (8a - 5b)$                       6)  $(x^2 - 4x + 3) - (4x^2 + 3x - 5)$                       7)  $(r^3 - 6w) - (2r + 3r^3 - 6w - 9)$

8)  $2x(3y + 9)$                       9)  $2p^2q(5pq - 3p^3q^2 + 4pq^4)$                       10)  $-9x^3(13xy - 8x + y^3)$

11)  $(y - 10)(y + 7)$                       12)  $(x + 6)(x + 3)$                       13)  $(2z - 1)(2z + 1)$

14)  $(2m - 3n)^2$                       15)  $(x + 1)(x^2 - 2x + 3)$                       16)  $(2x - 1)(x^2 - 4x + 4)$

**EXERCISE B**

Determine whether each expression is a polynomial (yes or no). If it is, state the degree of the polynomial.

17)  $3z^2 - 5z + 11$                       18)  $x^3 - 9$                       19)  $\frac{6xy}{5} - \frac{3c}{d}$                       20)  $\sqrt{m-5}$

21)  $5x^2y + x\sqrt{3}$                       22)  $\frac{4}{3}y^2 + \frac{5}{6}y^7$

Simplify.

23)  $(3x^2 - x + 2) + (x^2 + 4x - 9)$                       24)  $(5y + 3y^2) + (-8y - 6y^2)$                       25)  $(9r^2 + 6r + 16) - (8r^2 + 7r + 10)$

26)  $4a(3a^2 + b)$                       27)  $-5ab^2(-3a^2b + 6a^3b - 3a^4b^4)$                       28)  $2xy(3xy^3 - 4xy + 2y^4)$

29)  $(p + 6)(p - 4)$                       30)  $(6 - z)(6 + z)$                       31)  $(3x + 8)(2x + 6)$                       32)  $(5r - 9)^2$

33)  $(4y - 6)(2y + 7)$                       34)  $(3b - c)^3$                       35)  $(x^2 + xy + y^2)(x - y)$

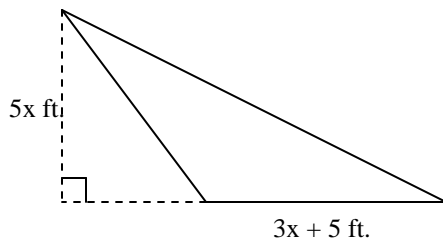
## EXERCISE C

36)  $d^{-3}(d^5 - 2d^3 + d^{-1})$

37)  $x^{-3}y^2(yx^4 + y^{-1}x^3 + y^{-2}x^2)$

38)  $(2x^2 + 5x - 3)(x^2 - 8x + 2)$

39) Find the area of the triangle pictured below.



40) Toshiro has \$850 to invest. He can invest in a savings account that has an annual interest rate of 1.7%, and he can invest in a money market account that pays about 3.5% per year. Write a polynomial (in simplest form) to represent the amount of interest he will earn in 1 year if he invests  $x$  dollars in the savings account, and the rest in the money market.



### ANSWERS:

1) yes; 1

3) no

5)  $10a - 2b$ 7)  $-2r^3 - 2r + 9$ 9)  $10p^3q^2 - 6p^5q^3 + 8p^3q^5$ 11)  $y^2 - 3y - 70$ 13)  $4z^2 - 1$ 15)  $x^3 - x^2 + x + 3$ 

17) yes; 2

19) no

21) yes; 3

23)  $4x^2 + 3x - 7$ 25)  $r^2 - r + 6$ 27)  $15a^3b^3 - 30a^4b^3 + 15a^5b^6$ 29)  $p^2 + 2p - 24$ 31)  $6x^2 + 34x + 48$ 33)  $8y^2 + 16y - 42$ 35)  $x^3 - y^3$ 37)  $xy^3 + y + \frac{1}{x}$ 39)  $7.5x^2 + 12.5x \text{ ft}^2$