

State whether each expression is a polynomial. If it is not a polynomial, tell why not.

1) $\frac{1}{80}z^3$

Polynomial

2) $a^8 - \frac{1}{5}a + \frac{b}{574a}$

Not a polynomial
 → no variables
 in
 denominator

3) $17m^{-1}n^2 = \frac{17n^2}{m^{-1}}$

Not a polynomial
 → no negative
 exponents
 → no variables
 in
 denominator

4) $2x + 6z - 3y$

Polynomial

5) $x^{\frac{3}{2}} + 2x - 4$

Not a polynomial
 → no fraction
 exponents

6) $4st^3 + 1.2t^2 - 0.8st$

Polynomial

7) $\sqrt{34} + 3x$

Polynomial

8) $|3x - 7|$

Not a polynomial
 → No variables
 inside
 "special symbols"

9) $\frac{3x}{8} + 2 - 5x^3 + xy$

Polynomial

Write each polynomial in standard form. Then name each polynomial based on its degree and number of terms.

10) $2p^4 + p^3$

SF: $2p^4 + p^3$

Quartic

Binomial

11) $-10a$

SF: $-10a$

Linear

Monomial

12) $2x^2 + 4x^3$

SF: $4x^3 + 2x^2$

Cubic

Binomial

13) 1

SF: 1

Constant

Monomial

14) $8w^2 - 5w^3 + 2w^5$

SF: $2w^5 - 5w^3 + 8w^2$

Quintic

Trinomial

15) $-7n^4 + 7n^7 - 5 + 9n$

SF: $7n^7 - 7n^4 + 9n - 5$

7th degree

Polynomial with

4 terms

16) $b^4 + 4b^6$

SF: $4b^6 + b^4$

6th degree

binomial

17) $-4 - 2a^2 + 8a$

SF: $-2a^2 + 8a - 4$

Quadratic

Trinomial

18) $4x - 9x^2 + 4x^3 + 3$

SF: $4x^3 - 9x^2 + 4x + 3$

Cubic Polynomial

with 4 terms