Grade: X **Subject:** Mathematics **Topic: Polynomials**

1. **Which of the following is/are NOT Polynomials and why?**

(1) $f(x) = 2$ (2) $f(x) = 3 - x$

(3) $f(x) = \sqrt{2}x - 4$ (4) $f(x) = 3\sqrt{x} + 4x^2$

(5) $f(x, y) = xy + 3x^2y$ (6) $f(t) = t - \sqrt{3}t + \frac{5}{2}t^4$

(7) $f(y) = \sqrt{y}^3 + \sqrt[5]{y}$ (8) $f(x) = x + \frac{1}{x} - \frac{1}{x^2}$

(9) $f(x, y) = \sqrt{2}xy^2 - \sqrt{7}x^2y$ (10) $f(x, y, z) = (x\ y\ z)^2 + x^2yz + yz^2$

2. **Find the degree of the following polynomials:**

(1) $f(x) = 0$ (5) $f(x) = x^2 - 3x^3 + 4x^{99}$

(2) $f(x) = 100$ (6) $f(x, y) = xy + x^2y + xy^3$

(3) $f(x) = -2x$ (7) $f(x, y) = 1 + 2xy + 3(x^2y)^2 + (3zy)^2$

(4) $f(x) = x^2 - 3x$ (8) $f(x, y, z) = 1 + x + y + z + xyz$

ANSWERS

1. 4, 7 and 8 . They have variables with negative integral and fractional powers
2. (1) Not defined (2) 0 (3) 1 (4) 2
   (5) 99 (6) 4 (7) 6 (8) 3