

Name: _____

Polynomials

Evaluate the polynomial when $x = 4$.

1) $5x - 3$

2) $2x^2 + x - 7$

3) $x^3 + x^2 - 6x - 8$

Evaluate the polynomial when $x = -1$ and $y = 2$.

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

5) $x^4 - x^2y$

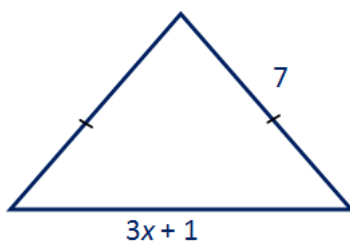
6) $-2x^2 + x^2y^3$

7) Your friend says that the degree of the polynomial $x^2 + xy^2$ is 2. Describe and correct your friend's error.8) Is the polynomial $3x^2 + 5x^2y + 7$ written in standard form? Explain your reasoning.

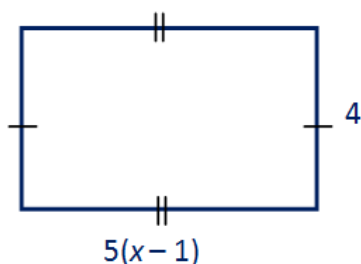
9) Give an example of a term that has degree 6 but that contains no variable with an exponent greater than 2. Explain your answer.

Write a polynomial expression for the perimeter of the figure. Give your answer in standard form.

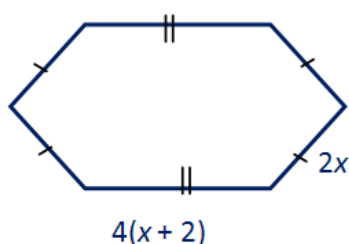
10)



11)



12)



13) The polynomials below give the approximate braking distance (in feet) needed to stop a car or train. In each polynomial, v is the vehicle's speed in miles per hour and r is the reaction time (in seconds) of the car's driver or the train's engineer. For the question below, use $r = 0.5$ second.

Car: $1.47vr + 0.05v^2$

Train: $1.47vr + 0.5v^2$

- What is the braking distance (to the nearest foot) of a car travelling 30 miles per hour? 55 miles per hour?
- What is the braking distance (to the nearest foot) of a train travelling 80 miles per hour? 125 miles per hour?
- How much greater is the braking distance of a train than the braking distance of a car if both vehicles are travelling at 55 miles per hour?

Find the degree of the polynomial. Write your answer in terms of n .

14) $x^n + x^{n-1} + x^{n-2}$

15) $x^n y^4 + 5x^3 y^n$

16) $6x^n y^n + x^2 y^{2n}$