Learning Goal 5.1		I can identify characteristics of polynomials and simplify polynomials by collecting like terms.			

Developing					
1. Identify how many terms there are in each polynomial.					
a.	$2x + 9$	b.	$9x^2 - 4x + 1$	c.	$x^3 - 5$
d.	$a^5 - 4a^3 + 3a^4 + a^2$	e.	$12 - j + j^4$	f.	$p^3 + p^4$
2. Identify the degree of each polynomial.					
a.	$2x + 9$	b.	$9x^2 - 4x + 1$	c.	$x^3 - 5$
d.	$a^5 - 4a^3 + 3a^4 + a^2$	e.	$12 - j + j^4$	f.	$p^3 + p^4$
3. Identify the constant term in each polynomial.					
a.	$2x + 9$	b.	$9x^2 - 4x + 1$	c.	$x^3 - 5$
d.	$a^5 - 4a^3 + 3a^4 + a^2$	e.	$12 - j + j^4$	f.	$p^3 + p^4$
4. Identify the coefficient of the highest degree term in each polynomial.					
a.	$2x + 9$	b.	$9x^2 - 4x + 1$	c.	$x^3 - 5$
d.	$a^5 - 4a^3 + 3a^4 + a^2$	e.	$12 - j + j^4$	f.	$p^3 + p^4$
5. Label each polynomial as a monomial, binomial, trinomial or a polynomial with what number of terms.					
a.	$2x + 9$	b.	$9x^2 - 4x + 1$	c.	$x^3 - 5$
d.	$a^5 - 4a^3 + 3a^4 + a^2$	e.	$12 - j + j^4$	f.	$p^3 + p^4$

$12 - j + j^4$

1. How many terms   3 terms

2. Degree (largest exponent on a variable)
   4

3. Constant (term without a variable)
   12

4. Coefficient (# out front of variable)
   $+ j^4 \Rightarrow 1$

5. What kind of polynomial
   trinomial.

6. Which of the following expressions are polynomials? Explain how you know.

a. $5x + x^7$	b. $\dfrac{3}{x}$	c. $\sqrt{9x^3}$
d. $\dfrac{1}{x^2} + \dfrac{1}{x} + 1$	e. $\dfrac{x^2}{2} + \dfrac{x}{4} + \dfrac{1}{8}$	f. $p^3 + p^4$

7. Identify which of the following can be represented by algebra tiles. For those that can, draw the model.

a. $2x + 9$	b. $x^2 - 4x + 1$	c. $x^3 - 5$
d. $a^5 - 4a^3 + 3a^4 + a^2$	e. $12 - j + j^2$	f. $p + p^2$

8. Identify the polynomial being modelled by the algebra tiles.

a.	b.	c.

(polynomials are expressions where the variable has only whole number exponents)
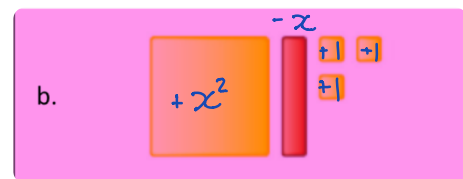
a. $5x + \cdot x^7$

is a polynomial

d. $\dfrac{1}{x^2} + \dfrac{1}{x} + 1$

$x^{-2} + x^{-1} + 1$
not a polynomial.

b. $x^2 - 4x + 1$

can be represented
- empty - positive
- filled - negative

c. $x^3 - 5$

cannot be represented

b.
$+ x^2$
$- x$
$+1$ $+1$
$+1$
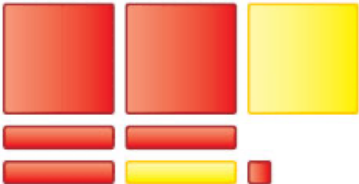
yellow - positive
red - negative.

$x^2 - x + 3$
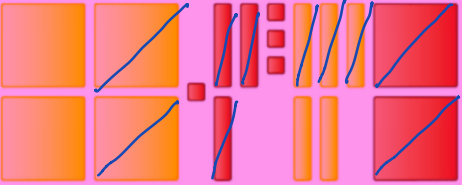
9. Identify the polynomial being modelled by the algebra tiles. Simplify if possible.

a.	b.

c.	d.

10. Simplify the polynomial.

a.	$6 - 3x + x^2 + 9 - x$	b.	$-6x^2 + 17x - 4 - 3x^2 + 8 - 12$
c.	$15x^2 - 12xy + 5y + 10xy - 8y - 9x^2$	d.	$4xy - y^2 - 3x^2 + 2xy - x - 3y^2$

b.

$2x^2 + 2x - 4$

c. $15x^2 - 12xy + 5y + 10xy - 8y - 9x^2$

$= 15x^2 - 9x^2 - 12xy + 10xy + 5y - 8y$

$= 6x^2 - 2xy - 3y$