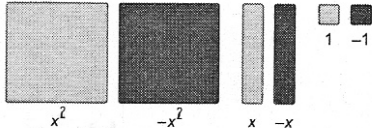
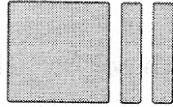
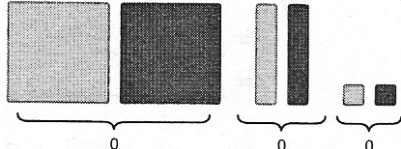


Unit 5 Study Guide

Skill	Description	Example
Recognize the different parts of a polynomial.	A polynomial may have variable terms and a constant term. The number in front of a variable is its coefficient.	variable term $(3x^2) + 2x + 4$ coefficient constant
Describe and classify polynomials.	A polynomial can be classified by its number of terms and by its term with the greatest degree.	Monomial: $3x$ Binomial: $2x + 5$ Trinomial: $x^2 + 2x - 1$ degree 2
Use algebra tiles to represent a polynomial.	We use these tiles:  A pair of tiles with the same shape and size, but different colours forms a zero pair. The tiles model 0.	$x^2 + 2x - 1$  
Simplify polynomials by combining like terms.	To simplify a polynomial, add the coefficients of like terms.	Like terms: $4x^2$ and $-2x^2$ Unlike terms: $3x$ and -5 $4x^2 - 2x^2 = 2x^2$
Add polynomials.	To add polynomials, remove the brackets and add the coefficients of like terms.	$(4x^2 + 3x) + (x^2 - 5x)$ $= 4x^2 + 3x + x^2 - 5x$ $= 4x^2 + x^2 + 3x - 5x$ $= 5x^2 - 2x$
Subtract polynomials.	To subtract a polynomial, add the opposite terms.	$(3x^2 + 5x) - (2x^2 - x)$ $= 3x^2 + 5x + (-2x^2 + x)$ $= 3x^2 + 5x - 2x^2 + x$ $= 3x^2 - 2x^2 + 5x + x$ $= x^2 + 6x$
Multiply a polynomial by a monomial.	To multiply a polynomial by a monomial, use the distributive property.	$3x(6x - 5)$ $= 3x(6x) + (3x)(-5)$ $= 18x^2 + (-15x)$ $= 18x^2 - 15x$
Divide a polynomial by a monomial.	To divide a polynomial by a monomial, divide each term of the polynomial by the monomial.	$\frac{24x^2 - 32x}{8x} = \frac{24x^2}{8x} + \frac{-32x}{8x}$ $= 3x - 4$

Unit 5 Review

5.1 1. Is the polynomial a monomial, binomial, or trinomial?

a) $-3s^2 + 11$ _____.

b) $8d$ _____.

c) $2e^2 - 9e + 7$ _____.

d) $8h - 1$ _____.

2. Sketch algebra tiles to model each polynomial.

a) $3k - 4$

b) $2m^2 - m + 3$

c) $-n^2 + 5n - 2$

5.2 3. Simplify each polynomial.

a) $-7d - 4 + 8d + 2$

= _____
= _____

b) $3e^2 - 8e + 2e^2 + 11e$

= _____
= _____

c) $13 - 6h + 2h^2 + 7h - 9$

= _____
= _____
= _____

d) $-9k^2 + 15k - 8 - 2k^2 - 4k + 3$

= _____
= _____

4. Identify and explain any errors you find.

a) $2x^2 + 5x = 7x^2$

b) $5s - 7s = -2s$

5.3 5. Sketch algebra tiles to model each sum. Then write the sum.

a) $(-5e + 7) + (4e - 1)$

b) $(6f^2 - 2f + 5) + (-4f^2 - f - 3)$

Remaining tiles: _____
So, $(-5e + 7) + (4e - 1) =$ _____

Remaining tiles: _____
So, $(6f^2 - 2f + 5) + (-4f^2 - f - 3) =$ _____

6. Add.

a) $(7r + 11) + (-2r + 3)$

= _____
 = _____
 = _____

b) $(-9s^2 + 5s) + (16s^2 - 9s - 14)$

= _____
 = _____
 = _____

5.4 7. Use algebra tiles to model each difference.

Sketch the tiles that remain, then write the difference.

a) $(-2t + 5) - (-5t + 7)$

Remaining tiles: _____
 So, $(-2t + 5) - (-5t + 7) =$ _____

b) $(-7u - 2) - (-u^2 - 3u - 1)$

Remaining tiles: _____
 So, $(-7u - 2) - (-u^2 - 3u - 1) =$ _____

8. Subtract.

a) $(6v + 5) - (13v - 3)$

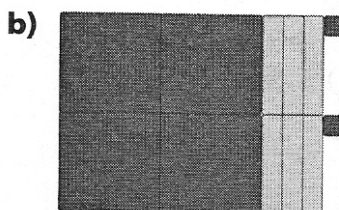
= $6v + 5 + (\text{_____})$
 = _____
 = _____
 = _____

b) $(10w^2 - 7) - (-2w + 9w^2 + 5)$

= _____
 = _____
 = _____
 = _____

5.5 9. Write the multiplication sentence modelled by each set of tiles.





10. Multiply.

a) $6(-7y^2 + 1)$

= $6(\text{_____}) + 6(\text{_____})$
 = _____

b) $-9(-2z^2 - 4z + 5)$

= _____
 = _____
 = _____

11. Divide.

a) $\frac{16a-40}{8}$

$= \frac{\quad}{8} + \frac{\quad}{8}$

$= \frac{16}{8} \times a + (\quad)$

$= \underline{\hspace{2cm}}$

$= \underline{\hspace{2cm}}$

b) $\frac{27b^2 - 9b + 36}{-9}$

$= \underline{\hspace{2cm}}$

$= \underline{\hspace{2cm}}$

$= \underline{\hspace{2cm}}$

$= \underline{\hspace{2cm}}$

5.6 12. Sketch algebra tiles to multiply. Write the product each time.

a) $2c(c + 5) = \underline{\hspace{2cm}}$

b) $3d(-d + 4) = \underline{\hspace{2cm}}$

13. Multiply.

a) $3e(5e - 2)$

$= (3e)(\quad) + (3e)(\quad)$

$= \underline{\hspace{1cm}}e^2 + (\underline{\hspace{1cm}})e$

$= \underline{\hspace{2cm}}$

b) $-4f(5f + 2)$

$= \underline{\hspace{2cm}}$

$= \underline{\hspace{2cm}}$

$= \underline{\hspace{2cm}}$

14. Divide.

a) $\frac{-21k^2}{7k}$

$= \frac{-21}{7} \times \frac{k^2}{k}$

$= \underline{\hspace{1cm}} \times \frac{k \times k^1}{k^1}$

$= \underline{\hspace{1cm}} \times k$

$= \underline{\hspace{2cm}}$

b) $\frac{81m^2 - 45m}{-9m}$

$= \underline{\hspace{2cm}}$

$= \underline{\hspace{2cm}}$

$= \underline{\hspace{2cm}}$

$= \underline{\hspace{2cm}}$

c) $\frac{-33n^2 + 36n}{-3n}$

$= \underline{\hspace{2cm}}$

$= \underline{\hspace{2cm}}$

$= \underline{\hspace{2cm}}$

$= \underline{\hspace{2cm}}$