

Polynomials [TE1-A]

$2y^2 - 2y + 1$ a. Monomial, binomial, or trinomial? <u>Trinomial</u> b. Degree: <u>2</u> c. Coefficient: <u>2</u>	$5x + 4 + x^3$ a. Monomial, binomial, or trinomial? <u>Trinomial</u> b. Degree: <u>3</u> c. Coefficient: <u>1</u>
$-5$ a. Monomial, binomial, or trinomial? <u>Monomial</u> b. Degree: <u>0</u> c. Coefficient: <u>-5</u>	$(3y - 2) + (4y + 7) = \underline{7y + 5}$  $20x^2 - 5xy - 4xy + y^2 = \underline{20x^2 - 9xy + y^2}$

Monomial, binomial, trinomial, polynomial [TE4-B]

a. Is the polynomial $-26$ a trinomial, binomial, or monomial? <u>Monomial</u> b. The degree of this polynomial is: <u>0</u>	
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Algebraic Expressions

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Adding [Te4-B]

$(6b^2 + 4b + 5) + (6b^2 + b + 3) =$ <u><math>12b^2 + 5b + 8</math></u>	$(3w^2 - w + 5) + (9w^2 - w + 7) =$ <u><math>12w^2 - 2w + 12</math></u>
$(4k^3 + 3k^2 + 6k) + (2k^2 + 5k + 6) =$ <u><math>4k^3 + 5k^2 + 11k + 6</math></u>	$\left(\frac{1}{9}r^4 - \frac{5}{7}r^3 - \frac{1}{6}\right) + \left(\frac{26}{9}r^4 - \frac{9}{7}r^3 + \frac{7}{6}\right) =$ <u><math>3r^4 - 2r^3 + 1</math></u>
Add $75y^2 + 75y - 75$ to $25y^2 + 75y + 100$ . <u><math>100y^2 + 150y + 25</math></u>	Add $2y^2 + 5y - 3$ to $-8y^2 + 3y - 9$ . <u><math>-6y^2 + 8y - 12</math></u>

Subtracting [TE4-B]

$x^2 - 7x - 8x + 56 =$ $\underline{x^2 - 15x + 56}$	$63a^2 - 9a + 14a - 2 =$ $\underline{63a^2 + 5a - 2}$
$u^2 + 2u - 2u - 4 =$ $\underline{u^2 - 4}$	$p^2 - p + 2p - 2 =$ $\underline{p^2 + p - 2}$
$(6s^3 - 7s - 1) - (-6s^3 + 7s + 1) =$ $\underline{12s^3 - 14s - 2}$	$(2u^2 - u - 3) - (-4u^2 + 5u + 1) =$ $\underline{6u^2 - 6u - 4}$
$\left(\frac{8}{9}k^3 - \frac{3}{4}k^2 - 2k + 1\right) - \left(\frac{7}{3}k^3 - 1k^2 + \frac{1}{5}k - \frac{1}{3}\right) =$ $-\frac{13}{9}k^3 + \frac{1}{4}k^2 - \frac{11}{5}k + \frac{4}{3}$	<p>Subtract <math>4y^2 + 10y + 3</math> from <math>5y^2 - 10y - 2</math>.</p> $\underline{y^2 - 20y - 5}$
<p>Subtract <math>2x + 5</math> from the sum of <math>6x + 4</math> and <math>7x + 3</math>.</p> $\underline{11x + 2}$	

Multiplying [TE-5] & FOIL

<p>Multiply the following by applying the distributive property.</p>	$3x(6x - 4) \quad \underline{18x^2 - 12x}$
$8ab(a^2 - ab + 1)$ $\underline{8a^3b - 8a^2b^2 + 8ab}$	$3x^2y(5x^3y - 3x^2y^2 + 2y^3)$ $\underline{15x^5y^2 - 9x^4y^3 + 6x^2y^4}$

$5xy^3(3x^2 + 5xy + 4y^2)$ <u><math>15x^3y^3 + 25x^2y^4 + 20xy^5</math></u>	$(a + 7)(a + 2)$ <u><math>a^2 + 9a + 14</math></u>  $(a - \frac{4}{5})(a + \frac{4}{5})$ <u><math>a^2 - \frac{16}{25}</math></u>
$(x - 2)(x + 3)$ <u><math>x^2 + x - 6</math></u>	$(3b - 5)(b - 4)$ <u><math>3b^2 - 17b + 20</math></u>
$(2y + 5)(7y - 6)$ <u><math>14y^2 + 23y - 30</math></u>	$(6a + 2)(b + 5)$ <u><math>6ab + 30a + 2b + 10</math></u>
$(7b - 3)(7b + 3)$ <u><math>49b^2 - 9</math></u>	$(4x + 3)(2x + 9)$ <u><math>8x^2 + 42x + 27</math></u>
$(b - 5)(b^2 - 3b + 4)$ <u><math>b^3 - 8b^2 + 19b - 20</math></u>	$(x + 6)(x^2 - 4x + 2)$ <u><math>x^3 + 2x^2 - 22x + 12</math></u>
$(6y^2 + 4y + 1)(y^2 - 5y + 3)$ <u><math>6y^4 - 26y^3 - y^2 + 7y + 3</math></u>	$(a + 6)(a + 3)(a + 2)$ <u><math>a^3 + 11a^2 + 36a + 36</math></u>

#### Simplifying Algebraic Expressions [TE-5]

$(6b - 5)(3b + 4) - 2$ <u><math>18b^2 + 9b - 22</math></u>	$4a(a - 1) - 3a(a - 2)$ <u><math>a^2 + 2a</math></u>
$(y + 5)(y - 3) + (-2)(4)$ <u><math>y^2 + 2y - 23</math></u>	$5b(b - 1) - 3b(b - 4)$ <u><math>2b^2 + 7b</math></u>

#### Exponents & Poly & Special Products [TE-6]

$(x + 13)^2$ <u><math>x^2 + 26x + 169</math></u>	$(a - 7)^2$ <u><math>a^2 - 14a + 49</math></u>

$(a - \frac{5}{2})^2 a^2 - 5a + \frac{25}{4}$	$(x - 13)^2 \underline{x^2 - 26x + 169}$
$(6x - 1)^2 \underline{36x^2 - 12x + 1}$	$(5a + 3)^2 \underline{25a^2 + 30a + 9}$
$(6a - 5)^2 \underline{36a^2 - 60a + 25}$	$(6x + 1)^2 \underline{36x^2 + 12x + 1}$

Dividing [Te7-B]

Divide $27x^2 - 21x$ by $3x$ . <u><math>9x - 7</math></u>	Divide $8x - 18x^3$ by $2x$ . <u><math>4 - 9x^2</math></u>
Divide $9x^2y - 72xy$ by $9x$ . <u><math>xy - 8y</math></u>	Divide $30x^5 - 48x^3 + 12x$ by $6x$ . <u><math>5x^4 - 8x^2 + 2</math></u>
Divide $45a^2 - 54a$ by $-9a$ . <u><math>-5a + 6</math></u>	Divide $6a^5 + 8a^4$ by $-2a$ . <u><math>-3a^4 - 4a^3</math></u>
Divide $8a^3b - 40a^2b^2 + 32ab^3$ by $-8a$ . <u><math>-a^2b + 5ab^2 - 4b^3</math></u>	Find the quotient $\frac{24x+27y}{3} = \underline{8x + 9y}$
$\frac{12x-32y}{4} = \underline{3x - 8y}$	$\frac{30xy^2-18x}{-6x} = \underline{-5y^2 + 3}$

Greatest Common Factor [TE3-A]

$7a^3 - 5a^2 = \underline{a^2(7a - 5)}$	$25ab^2c^3 + 15a^3c^3 - 25ac^2 = \underline{5ac^2(5b^2c + 3a^2c - 5)}$

$42x^2y - 7xy^2 = \underline{7xy \cdot (6x - y)}$	$8a^2(a + b)^2 + 10b^2(a + b)^2 = \underline{2(a + b)^2(4a^2 + 5b^2)}$
$9b^3 + 18b^2 + 21b = \underline{3b \cdot (3b^2 + 6b + 7)}$	$5x^2(x - 5) - 6x(x - 5) + 3(x - 5) = \underline{(x - 5)(5x^2 - 6x + 3)}$
$-60x^3y^2 + 108x^2y^3 + 132x^3y^3 = \underline{12x^2y^2(-5x + 9y + 11xy)}$	$4x(a - b) + 3y(a - b) = \underline{(a - b)(4x + 3y)}$

Find the value of y [TE4-B]

Find the value of $x^2 - 4x + 4$ when $x = -3$ . <u>25</u>	Find the value of $x^2 + 2x + 1$ when $x = 1$ . <u>4</u>
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Solving for zero

<p>Solving equations using the Special zero factor property to set the factors to "0" and solve {TF8-A}</p> <p>1 <math>y^2 + 11y + 24 = 0, y = \underline{-3, -8}</math></p> <p>2 <math>100x^2 + 500x - 1400 = 0, x = \underline{2, -7}</math></p>	<p>3 <math>r^2 = -4r + 5, r = \underline{1, -5}</math></p> <p>4 <math>a^2 - 4 = 0, a = \underline{-2, 2}</math></p>
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