Multiplying Polynomials

Bell Work:

1. **What is the key word for multiplying binomials?**

2. **What is a monomial?**

3. **Multiply** $(3a + 7)(4a - 9)$.

4. **What is the range for the constant parent function?**

Multiplying Polynomials

Multiply each pair of polynomials.

1. $(x+2)(x^2-5x+4) = x^3$

Multiply the 1st term in the binomial with each term in the trinomial.

Multiplying Polynomials

Multiply each pair of polynomials.

1. $(x+2)(x^2-5x+4) = x^3-5x^2$

Multiply the 1st term in the binomial with each term in the trinomial.

Multiplying Polynomials

Multiply each pair of polynomials.

1. $(x+2)(x^2-5x+4) = x^3-5x^2+4x$

Multiply the 1st term in the binomial with each term in the trinomial.

Multiplying Polynomials

Multiply each pair of polynomials.

1. $(x+2)(x^2-5x+4) = x^3 - 5x^2 + 4x$

$+2x^2$

Multiply the 2nd term in the binomial with each term in the trinomial.

Line up the terms with the same variable.

Multiplying Polynomials

Multiply each pair of polynomials.

1. $(x+2)(x^2-5x+4) = x^3 - 5x^2 + 4x$

$+2x^2 - 10x$

Multiply the 2nd term in the binomial with each term in the trinomial.

Line up the terms with the same variable.

Multiplying Polynomials

Multiply each pair of polynomials.

1. $(x+2)(x^2-5x+4) = x^3-5x^2+4x$

$+2x^2-10x+8$

Multiply the 2nd term in the binomial with each term in the trinomial.

Line up the terms with the same variable.

Multiplying Polynomials

Multiply each pair of polynomials.

1. $(x+2)(x^2-5x+4) = x^3-5x^2+4x$

Add straight down.

$$+2x^2-10x+8$$

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

Answer.

Multiplying Polynomials

Multiply each pair of polynomials.

2. $(2y-5)(6y^2+7y-10) = 12y^3$

Multiply the 1st term in the binomial with each term in the trinomial.

Multiplying Polynomials

Multiply each pair of polynomials.

2. $(2y-5)(6y^2+7y-10) = 12y^3+14y^2$

Multiply the 1st term in the binomial with each term in the trinomial.

Multiplying Polynomials

Multiply each pair of polynomials.

2. $(2y-5)(6y^2+7y-10) = 12y^3+14y^2-20y$

Multiply the 1st term in the binomial with each term in the trinomial.

Multiplying Polynomials

Multiply each pair of polynomials.

2. $(2y-5)(6y^2+7y-10) = 12y^3+14y^2-20y$

$-30y^2$

Multiply the 2nd term in the binomial with each term in the trinomial.

Line up the terms with the same variable.

Multiplying Polynomials

Multiply each pair of polynomials.

2. $(2y-5)(6y^2+7y-10) = 12y^3 + 14y^2 - 20y$

$$-30y^2 - 35y$$

Multiply the 2nd term in the binomial with each term in the trinomial.

Line up the terms with the same variable.

Multiplying Polynomials

Multiply each pair of polynomials.

2. $(2y-5)(6y^2+7y-10) = 12y^3+14y^2-20y$

$-30y^2-35y+50$

Multiply the 2nd term in the binomial with each term in the trinomial.

Line up the terms with the same variable.

Multiplying Polynomials

Multiply each pair of polynomials.

2. $(2y-5)(6y^2+7y-10) = 12y^3+14y^2-20y$

$$\underline{\qquad\qquad -30y^2-35y+50}$$

$$12y^3-16y^2-55y+50$$

Add straight down.

Answer.

Multiplying Polynomials

Multiply each pair of polynomials.

3. $(4w^2 + w + 6)(3w - 8) = \ 12w^3$

Multiply the 1st term in the trinomial with each term in the binomial.

Multiplying Polynomials

Multiply each pair of polynomials.

3. $(4w^2 + w + 6)(3w - 8) = 12w^3 - 32w^2$

Multiply the 1st term in the trinomial with each term in the binomial.

Multiplying Polynomials

Multiply each pair of polynomials.

3. $(4w^2 + w + 6)(3w - 8) = 12w^3 - 32w^2$

$+3w^2$

Multiply the 2nd term in the trinomial with each term in the binomial.

Line up the terms with the same variable.

Multiplying Polynomials

Multiply each pair of polynomials.

3. $(4w^2 + w + 6)(3w - 8) = 12w^3 - 32w^2$

$+3w^2 \quad -8w$

Multiply the 2nd term in the trinomial with each term in the binomial.

Line up the terms with the same variable.

Multiplying Polynomials

Multiply each pair of polynomials.

3. $(4w^2 + w + 6)(3w - 8) = 12w^3 - 32w^2$

$+3w^2 \quad -8w$

$+18w$

Multiply the 3rd term in the trinomial with each term in the binomial.

Line up the terms with the same variable.

Multiplying Polynomials

Multiply each pair of polynomials.

3. $(4w^2 + w + 6)(3w - 8) = 12w^3 - 32w^2$

$+3w^2 \quad -8w$

$+18w \quad -48$

Multiply the 2nd term in the trinomial with each term in the binomial.

Line up the terms with the same variable.

Multiplying Polynomials

Multiply each pair of polynomials.

3. $(4w^2 + w + 6)(3w - 8) =$

$$\begin{array}{rl} & 12w^3 - 32w^2 \\ & +3w^2 \ -8w \\ & +18w \ -48 \\ \hline & 12w^3 - 29w^2 + 10w \ -48 \end{array}$$

Add straight down.

Answer.

Multiplying Polynomials

Multiply each pair of polynomials.

4. $(5v^2 - 6v + 11)(4v + 9) = 20v^3$

Multiply the 1st term in the trinomial with each term in the binomial.

Multiplying Polynomials

Multiply each pair of polynomials.

4. $(5v^2 - 6v + 11)(4v + 9) = 20v^3 + 45v^2$

Multiply the 1st term in the trinomial with each term in the binomial.

Multiplying Polynomials

Multiply each pair of polynomials.

4. $(5v^2 - 6v + 11)(4v + 9) = 20v^3 + 45v^2$

$-24v^2$

Multiply the 2nd term in the trinomial with each term in the binomial.

Multiplying Polynomials

Multiply each pair of polynomials.

4. $(5v^2 - 6v + 11)(4v + 9) = 20v^3 + 45v^2$

$-24v^2 - 54v$

Multiply the 2nd term in the trinomial with each term in the binomial.

Multiplying Polynomials

Multiply each pair of polynomials.

4. $(5v^2 - 6v + 11)(4v + 9) = 20v^3 + 45v^2$

$-24v^2 - 54v$

$+44v$

Multiply the 3rd term in the trinomial with each term in the binomial.

Multiplying Polynomials

Multiply each pair of polynomials.

4. $(5v^2 - 6v + 11)(4v + 9) = 20v^3 + 45v^2$

$-24v^2 - 54v$

$+44v + 99$

Multiply the 3rd term in the trinomial with each term in the binomial.

Multiplying Polynomials

Multiply each pair of polynomials.

4. $(5v^2 - 6v + 11)(4v + 9) = 20v^3 + 45v^2$

Multiply the 3rd term in the trinomial with each term in the binomial.

$$-24v^2 - 54v$$

Add straight down.

$$+44v + 99$$

$$20v^3 + 21v^2 - 10v + 99$$

Answer.

Multiplying Polynomials

Multiply each pair of polynomials.

5. $(4u^2 + 5u - 16)(2u^2 - 8u - 8) = 16u^4$

Multiply the 1st term in the trinomial with each term in the trinomial.

Multiplying Polynomials

Multiply each pair of polynomials.

5. $(4u^2 + 5u - 16)(2u^2 - 8u - 8) = 16u^4 - 32u^3$

Multiply the 1st term in the trinomial with each term in the trinomial.

Multiplying Polynomials

Multiply each pair of polynomials.

5. $(4u^2 + 5u - 16)(2u^2 - 8u - 8) = 16u^4 - 32u^3 - 32u^2$

Multiply the 1st term in the trinomial with each term in the trinomial.

Multiplying Polynomials

Multiply each pair of polynomials.

5. $(4u^2 + 5u - 16)(2u^2 - 8u - 8) = 16u^4 - 32u^3 - 32u^2$

$+10u^3$

Multiply the 2nd term in the trinomial with each term in the trinomial.

Multiplying Polynomials

Multiply each pair of polynomials.

5. $(4u^2 + 5u - 16)(2u^2 - 8u - 8) = 16u^4 - 32u^3 - 32u^2$

$+10u^3 - 40u^2$

Multiply the 2nd term in the trinomial with each term in the trinomial.

Multiplying Polynomials

Multiply each pair of polynomials.

5. $(4u^2 + 5u - 16)(2u^2 - 8u - 8) = 16u^4 - 32u^3 - 32u^2$

$+10u^3 - 40u^2 - 40u$

Multiply the 2nd term in the trinomial with each term in the trinomial.

Multiplying Polynomials

Multiply each pair of polynomials.

5. $(4u^2 + 5u - 16)(2u^2 - 8u - 8) = 16u^4 - 32u^3 - 32u^2$

$+10u^3 - 40u^2 - 40u$

$-32u^2$

Multiply the 3rd term in the trinomial with each term in the trinomial.

Multiplying Polynomials

Multiply each pair of polynomials.

5. $(4u^2 + 5u - 16)(2u^2 - 8u - 8) = 16u^4 - 32u^3 - 32u^2$

$+10u^3 - 40u^2 - 40u$

$-32u^2 - 128u$

Multiply the 3rd term in the trinomial with each term in the trinomial.

Multiplying Polynomials

Multiply each pair of polynomials.

5. $(4u^2 + 5u - 16)(2u^2 - 8u - 8) = 16u^4 - 32u^3 - 32u^2$

$+10u^3 - 40u^2 - 40u$

$-32u^2 - 128u - 128$

Multiply the 3rd term in the trinomial with each term in the trinomial.

Multiplying Polynomials

Multiply each pair of polynomials.

5. $(4u^2 + 5u - 16)(2u^2 - 8u - 8) =$

$$16u^4 - 32u^3 - 32u^2$$
$$+10u^3 - 40u^2 - 40u$$
$$-32u^2 - 128u - 128$$
$$16v^4 - 20u^3 - 104u^2 - 168u - 128$$

Add straight down.

Answer.

Multiplying Polynomials

Multiply each pair of polynomials.

6. $(7t^2 + 8t - 9)(16t^2 - 6t + 7) = 112t^4 - 42t^3 + 49t^2$

Multiply the 1st term in the 1st trinomial with every term in the 2nd trinomial.

Multiplying Polynomials

Multiply each pair of polynomials.

6. $(7t^2 + 8t - 9)(16t^2 - 6t + 7) = 112t^4 - 42t^3 + 49t^2$

$+128t^3 - 48t^2 + 56t$

Multiply the 2nd term in the 1st trinomial with every term in the 2nd trinomial.

Multiplying Polynomials

Multiply each pair of polynomials.

6. $(7t^2 + 8t - 9)(16t^2 - 6t + 7) = 112t^4 - 42t^3 + 49t^2$

$+128t^3 - 48t^2 + 56t$

$-144t^2 + 54t - 63$

Multiply the 3rd term in the 1st trinomial with every term in the 2nd trinomial.

Multiplying Polynomials

Multiply each pair of polynomials.

6. $(7t^2 + 8t - 9)(16t^2 - 6t + 7) = 112t^4 - 42t^3 + 49t^2$

$+128t^3 - 48t^2 + 56t$

$-144t^2 + 54t - 63$

$112t^4 + 86t^3 - 143t^2 + 110t - 63$

Add straight down.

Answer.

Multiplying Polynomials

Assignment:

Fluency Practice: Multiplying Polyomials Worksheet