

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

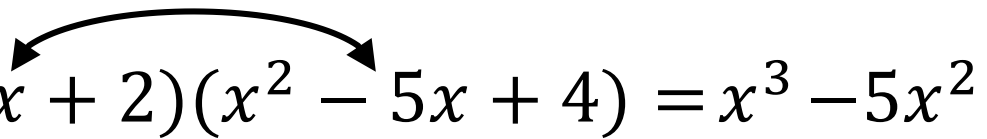


Multiply the 1st term in the binomial with each term in the trinomial.

Multiplying Polynomials

Multiply each pair of polynomials.

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

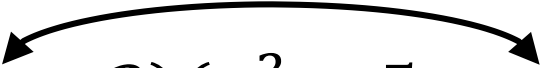


Multiply the 1st term in the binomial with each term in the trinomial.

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



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

$$+ 2x^2$$

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



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

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

Line up the terms with the same variable.

Multiplying Polynomials

Multiply each pair of polynomials.

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

$$\begin{array}{r} +2x^2 - 10x + 8 \\ \hline \end{array}$$

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


Add straight down.

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

$$\begin{array}{r} + 14y^2 - 20y \\ - 30y^2 - 35y + 50 \\ \hline 12y^3 - 16y^2 - 55y + 50 \end{array}$$


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.

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


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



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


$$\begin{array}{r} +3w^2 - 8w \\ +18w \end{array}$$

Line up the terms with the same variable.

Multiplying Polynomials

Multiply each pair of polynomials.

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



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

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

$$+18w - 48$$

Line up the terms with the same variable.

Multiplying Polynomials

Multiply each pair of polynomials.

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

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

Add straight down.

$$+18w - 48$$


$$12w^3 - 29w^2 + 10w - 48$$

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.

$$\begin{array}{r} 20v^3 + 45v^2 \\ -24v^2 - 54v \\ +44v + 99 \\ \hline 20v^3 + 21v^2 - 10v + 99 \end{array}$$


Add straight down.

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.

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

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

$$+10u^3 - 40u^2 - 40u$$
$$-32u^2$$

Multiplying Polynomials

Multiply each pair of polynomials.

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

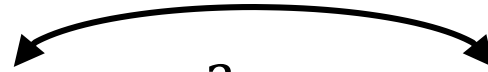
Multiply the 3rd term in the trinomial with each term in the trinomial.

$$+10u^3 - 40u^2 - 40u$$
$$-32u^2 - 128u$$

Multiplying Polynomials

Multiply each pair of polynomials.

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



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

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

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

Multiplying Polynomials

Multiply each pair of polynomials.

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

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


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

$$16v^4 - 20u^3 - 104u^2 - 168u - 128$$

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.

$$\begin{array}{r} 6. (7t^2 + 8t - 9)(16t^2 - 6t + 7) = 112t^4 - 42t^3 + 49t^2 \\ + 128t^3 - 48t^2 + 56t \\ - 144t^2 + 54t - 63 \\ \hline 112t^4 + 86t^3 - 143t^2 + 110t - 63 \end{array}$$

Add straight down.

Answer.

Multiplying Polynomials

Assignment:

Fluency Practice: Multiplying Polynomials Worksheet