

Monomial Times Polynomial

Example

Multiply: $3x(7x^2 + 4x - 9)$.

$$3x(7x^2) + 3x(4x) - 3x(9)$$

$$21x^3 + 12x^2 - 27x$$

Use the Distributive Property.

Simplify.

Find the product and simplify.

1 $2x(2x^2 - 4x + 11)$

2 $6x^2(5 - 9x - x^2)$

3 $3x(9x + 5xy)$

4 $-4(3x^3 - 2x)$

5 $2x(3x^3 + 2x^2 - 7)$

6 $-3(x^2 + 6xy - 3y^2)$

7 $x^2y(x + xy^2 + 1)$

8 $\frac{2}{3}xy(12x^2 - 15xy + 9y^2)$

9 $3x^2(x + xy)$

10 $x(16x^2 - 8 + 12x)$

11 $-xy(6xy + 4y^3)$

12 $-7x(-3x + 5xy - 9y^2)$

Answer Box

A $3x^3 + 3x^3y$	B $27x^2 + 15x^2y$	C $8x^3y - 10x^2y^2 + 6xy^3$	D $21x^2 - 35x^2y + 63xy^2$	E $4x^3 - 8x^2 + 22x$	F $-12x^3 + 8x$
G $-6x^2y^2 - 4xy^4$	H $6x^4 + 4x^3 - 14x$	I $-3x^2 - 18xy + 9y^2$	J $-6x^4 - 54x^3 + 30x^2$	K $16x^3 + 12x^2 - 8x$	L $x^3y + x^3y^3 + x^2y$

Rats—FOILed Again!

Multiply out each expression.

1 $(x + 1)(x + 5)$

2 $(x + 2)(x + 4)$

3 $(x + 1)(x - 1)$

4 $(x + 4)(x - 4)$

5 $(-x + 2)(x - 5)$

6 $(2x - 4)(x - 3)$

7 $(x - 1)(-x - 3)$

8 $(-x - 1)(-x - 3)$

9 $(2x + 1)(x + 3)$

10 $(4x + 5)(2x + 6)$

11 $(-2x + 2)(5x - 3)$

12 $(3x - 1)(x - 4)$

Use FOIL (first, outer, inner, last) to keep track of which terms to multiply. Then combine like terms.



Answer Box

A $x^2 - 1$	B $2x^2 + 7x + 3$	C $x^2 + 4x + 3$	D $2x^2 - 10x + 12$	E $x^2 - 16$	F $x^2 + 6x + 5$
G $-10x^2 + 16x - 6$	H $-x^2 + 7x - 10$	I $x^2 + 6x + 8$	J $3x^2 - 13x + 4$	K $8x^2 + 34x + 30$	L $-x^2 - 2x + 3$

