

To multiply monomials:

- ✓ Multiply the leading coefficients.
- ✓ Multiply common letters by adding the exponents.

Examples: Simplify the following.

- 1) $4m^1 \cdot 3m^1 \cdot m^5$ $12m^7$ 2) $2m^1 \cdot 3n^1 \cdot 6m^5 \cdot 4n^4$ $144m^6n^5$
- 3) $7m^3(3m^4)$ $21m^7$ 4) $(3y^3)(-4y^5)$ $-12y^8$
- 5) $(-6x^2y^4)(2x^3)$ $-12x^5y^4$ 6) $(-5a^4) \cdot (-2a^{10})$ $10a^{14}$

Remember to multiply/ through parentheses ☺

7) $x(2x^1 + 4x^2)$

$2x^2 + 4x^3$

8) $y^3(2y^1 + 4)$

$2y^4 + 4y^3$

10) $2m^4(m^3 - 3m^1) 2m^4$ $2m^7$ $-6m^5$

9) $6x^3(2x^2 + 3x^1 - 1)$

$12x^5 + 18x^4 - 6x^3$

$2m^7 - 6m^5$

11) $-5x(x^2 + 7x - 21)$

$-5x^3 - 35x^2 + 105x$

12) $-2x^2(3x^3 + 4x^1 - 5) + 8x^5$

$-6x^5$ $-8x^3 + 10x^2$ $+ 8x^5$

$-5x^1$ x^2 $+ 7x^1$ $- 21$

$-5x^3$ $-35x^2$ $+105x$

$2x^5 - 8x^3 + 10x^2$

Dividing Monomials:

- ✓ Divide the Numerical Coefficients.
- ✓ Divide common letters by subtracting the exponents.

Divide and simplify the following:

1) $\frac{10x^5}{2x^2}$

$$\boxed{5x^3}$$

2) $\frac{24a^4b^5}{3db^3}$

$$\boxed{8a^3b^2}$$

3) $\frac{20m^4n^6}{4n^2}$

$$\boxed{5m^4n^4}$$

4) $\frac{10a^7}{20a^2}$

$$\boxed{\frac{1}{2}a^5}$$

Calc:
ALPHA
Y=
to ✓!
☺

5) $\frac{8x^4y^2}{24x^2y^2}$

$$\boxed{\frac{1}{3}x^2}$$

6) $\frac{7m^3}{7m^3}$

$$\boxed{1}$$

Simplify each of the following:

1) $5x \cdot 3x^4$
 $15x^5$

2) $(3m^4)(10m^2y)$
 $30m^6y$

3) $(-6a^7)(-3a^2)$
 $18a^9$

4) $7ab \cdot 2a^5 \cdot 9a^6$
 $126a^{12}b$

5) $7m^2(m - 5m^3)$
 $7m^3 - 35m^5$

6) $-5x(x^2 + 7x - 20)$
 $-5x^3 - 35x^2 + 100x$

7) $-2x(3x^2 - 4) + 5x^2 - 11x + 9$
 $-6x^3 + 8x + 5x^2 - 11x + 9$
 $-x^2 - 3x + 9$

8) $\frac{18x^9}{2x^3}$
 $9x^6$

9) $\frac{30x^6y^2}{10x^4y^2}$
 $3x^2$

10) $\frac{8m^6}{8m^6}$
 1

11) $\frac{6a^8b^7}{12a^3b}$
 $\frac{1}{2}a^5b^6$

$30 \cdot x \cdot x \cdot x \cdot x \cdot x \cdot x \cdot y \cdot y$

 $10 \cdot x \cdot x \cdot x \cdot x \cdot y \cdot y$