

Topic: Multiplying and dividing like terms**Question:** Simplify the expression.

$$\frac{x(x + x + m + b)}{x}$$

Answer choices:

- A $2x + m + b$
- B $x^2 + mx + bx$
- C $x^3 + mx^2 + bx^2$
- D 1



Solution: A

We could expand the numerator, but before we do that we can cancel the x outside of the parentheses in the numerator with the x in the denominator.

$$\frac{x(x + x + m + b)}{x}$$

$$(x + x + m + b)$$

$$x + x + m + b$$

Now we just add like terms.

$$(1x + 1x) + m + b$$

$$2x + m + b$$



Topic: Multiplying and dividing like terms**Question:** Simplify the expression.

$$\frac{5x^2 \cdot 3y \cdot 2x}{2xy}$$

Answer choices:

- A $30x^2y$
- B $30x^4y^2$
- C $15x^2y^2$
- D $15x^2$



Solution: D

We'll group together the x terms in the numerator,

$$\frac{5x^2 \cdot 3y \cdot 2x}{2xy}$$

$$\frac{(5x^2 \cdot 2x) \cdot 3y}{2xy}$$

and then we'll apply product rule, keeping the base the same, and adding the exponents.

$$\frac{10x^{(2+1)} \cdot 3y}{2xy}$$

$$\frac{10x^3 \cdot 3y}{2xy}$$

$$\frac{30x^3y}{2xy}$$

We apply quotient rule, keeping the base the same, and subtracting the exponents.

$$15x^{3-1}y^{1-1}$$

$$15x^2y^0$$

$$15x^2$$



Topic: Multiplying and dividing like terms**Question:** Simplify the expression.

$$\frac{t^3 \cdot t^4 \cdot d^5}{t^5 \cdot d^4}$$

Answer choices:

A $\frac{t^7}{d^4}$

B $t^{12}d^9$

C $\frac{t^2}{d}$

D t^2d



Solution: D

Add the exponents of the t terms in the numerator,

$$\frac{t^3 \cdot t^4 \cdot d^5}{t^5 \cdot d^4}$$

$$\frac{t^{3+4}d^5}{t^5d^4}$$

$$\frac{t^7d^5}{t^5d^4}$$

then subtract the exponents of t and d .

$$t^{7-5}d^{5-4}$$

$$t^2d$$

