Topic: Distributive property

Question: Which of these represents the distributive property?

Answer choices:

A $3(x + b) = 3x + b$

B $3(x + b) = 3x + 3b$

C $3(x + b) = 3 + x + b$

D $3(x + b) = x + 3b$

Solution: B

The distributive property tells us to multiply the value outside the parentheses by each of the terms inside the parentheses.

$$3(x + b)$$

$$3(x) + 3(b)$$

$$3x + 3b$$

Topic: Distributive property

Question: Use the distributive property to expand the expression.

$$\frac{1}{2}(4x+4)$$

Answer choices:

A $2x+2$

B $4x+4$

C $2x$

D $2+x$

Solution: A

The distributive property tells us to multiply the value outside the parentheses by each of the terms inside the parentheses.

$$\frac{1}{2}(4x+4)$$

$$\frac{1}{2}(4x)+\frac{1}{2}(4)$$

$$2x+2$$

Topic: Distributive property

Question: Use the distributive property to expand the expression.

$$2xy^2\left(xy + mx + b\right)$$

Answer choices:

A $xy + mx + b$

B $2xy^2 + 2my^2 + 2b$

C $x^2y^3 + 2xy^2m + b$

D $2x^2y^3 + 2mx^2y^2 + 2bxy^2$

Solution: D

The distributive property tells us to multiply the value outside the parentheses by each of the terms inside the parentheses.

$$2xy^2\left(xy+mx+b\right)$$

$$2xy^2\left(xy\right)+2xy^2\left(mx\right)+2xy^2\left(b\right)$$

$$2x^2y^3+2x^2y^2m+2xy^2b$$

It's customary to write the variables in alphabetical order, so we'll rearrange them to get our final answer.

$$2x^2y^3+2mx^2y^2+2bxy^2$$