

Distributive Property of Multiplication (DPOM):

$$\begin{aligned}\text{Example 1: } 3(4 + 5) &= 3 \cdot 4 + 3 \cdot 5 \\ &= 12 + 15 \\ &= 27\end{aligned}$$

(You “distribute” or “run” the 3 through the “()”)

$$\begin{aligned}\text{Example 2: } (2 + 6)4 &= 4 \cdot 2 + 4 \cdot 6 \\ &= 8 + 24 \\ &= 32\end{aligned}$$

(You “distribute” or “run” the 4 through the “()”)

$$\begin{aligned}\text{Example 3: } 3(x - 4) &= 3 \cdot x - 3 \cdot 4 \\ &= 3x - 12\end{aligned}$$

(You “distribute” or “run” the 3 through the “()”)

$$\begin{aligned}\text{Example 4: } -5(2x - 4) &= -5 \cdot 2x - -5 \cdot 4 \\ &= -10x - -20 \\ &= -10x + 20\end{aligned}$$

(You “distribute” or “run” the -5 through the “()”)

Do 1-4 on your own: Use my arrows to help. (Be careful #3 and #4 are tricky.)

$$1. 4(7x - 6) = 28x + -24$$

$$2. -(3x + 9) = -3x + -9$$

$$3. \frac{3}{4}(8x + 12) = 6x + 9$$

$$4. -3(2x - 6y + 10) = -6x + 18y + -30$$

Try 5 - 10 on your own. This time I did not provide the arrows but you may draw them in to help.

$$5. 6(-5c + 9) = -30c + 54$$

$$6. \frac{2}{7}(14x - 28) = 4x + -8$$

$$7. (3x + 9)8 = 24x + 72$$

$$8. -9(5m - 6n) = -45m + 54n$$

$$9. 7(-7r + 8) = -49r + 56$$

$$10. -11(3a - 4b + 5c) = -33a + 44b + -55c$$

key

Home work on Distributive Property of Multiplication
Please show ALL of your work for full credit.

1. $(w + 3)7 =$

#1 answer: $7w + 21$

2. $8(k - 9) =$

#2 answer: $8k + -72$

3. $5(b - 6) =$

#3 answer: $5b + -30$

4. $3(6 + k) =$

#4 answer: $3k + 18$

5. $24(b - 42) =$

#5 answer: $24b + -1,008$

6. $\frac{3}{8}(16x - 24) =$

#6 answer: $6x + -9$

7. $-(3x - 4y + 5z) =$

#7 answer: $-3x + 4y + -5z$

8. $-6(2x + 3y + 5) =$

#8 answer: $-12x + -18y + -30$

9. $2.8(10x + y) =$

#9 answer: $28x + 2.8y$

10. $(2x + 3y + 5)(-2) =$

#10 answer: $-4x + -6y + -10$