

**THE DISTRIBUTIVE PROPERTY OF MULTIPLICATION  
WORD PROBLEMS**

**ANSWERS**

Use the *Distributive Property of Multiplication* to solve each word problem. Show your work!

**HELPFUL EXAMPLE**

- ❖ Mike bought 22 comic books. If each book cost \$3.50, what was the total cost?

$22 \times 3.50 \Rightarrow 22 \times 3.50 = 22 \times (3 + 0.50)$  22 x 3.50 CAN BE CHANGED TO 22 x (3 + 0.50), BECAUSE 3.50 = (3 + 0.50).

$22 \times (3 + 0.50)$  BY CHANGING THE 3.50 TO (3 + 0.50) WE CAN SOLVE THIS PROBLEM IN OUR HEAD.

$22 \times (3 + 0.50) \Rightarrow (22 \times 3) + (22 \times 0.50) = 66 + 11 = \underline{\$77}$  USING THE DISTRIBUTIVE PROPERTY WE CAN MULTIPLY 22 BY 3 AND 0.50 SEPARATELY.

22 X 3 EQUALS 66 AND 22 X 0.50 IS THE SAME AS TAKING HALF OF 22, WHICH EQUALS 11.

**Now your turn.**

1. You receive a \$100.00 gift card for an online video game store. You have a choice of buying 6 games for \$16 each or 7 games for \$15 each. Which offer can you afford with your gift card?

$$6 \times 16 = 6 \times (10 + 6) = (6 \times 10) + (6 \times 6) = 60 + 36 = \$96$$

$$7 \times 15 = 7 \times (10 + 5) = (7 \times 10) + (7 \times 5) = 70 + 35 = \$105$$

2. Bob wants to rent an office for his new graphic design business. The owner of the office charges \$21.00 per square foot every month. If the office is 102 square feet, how much will Bob have to pay monthly?

$$21 \times 102 = 21 \times (100 + 2) = (21 \times 100) + (21 \times 2) = 2,100 + 42 = \$2,142$$

3. Jack's Chocolate Factory sells an estimated 220 million chocolate bars every year. If one chocolate bar sells for \$2.50, what is his total sales per year?

$$220 \times 2.50 = 220 \times (2 + 0.50) = (220 \times 2) + (220 \times 0.50) = 440 + 110 = 550 \text{ million dollars}$$

4. A family decides to take a drive over the weekend. The trip will require about 33 gallons of gas. If each gallon of gas will take them 23 miles, what is the total distance of the trip?

$$33 \times 23 = 33 \times (20 + 3) = (33 \times 20) + (33 \times 3) = 660 + 99 = 759 \text{ miles}$$

5. Pauline pays \$600 for rent each month. How much money does she spend on rent in two years?

$$600 \times 12 \times 2 = 600 \times 24 = 600 \times (20 + 4) = (600 \times 20) + (600 \times 4) = 12,000 + 2,400 = \$14,400$$