

## Solving Expressions using Distributive Property

**1. True or False**

a.  $3 \times (20 + 5) = 3 \times 20 + 3 \times 5$  \_\_\_\_\_

b.  $\frac{2}{7} \times \left(\frac{4}{5} + \frac{5}{9}\right) = \frac{2}{7} \times \frac{4}{5} - \frac{2}{7} \times \frac{5}{9}$  \_\_\_\_\_

c.  $15 \times (60 + 88) = 15 \times 60 + 15 \times 88$  \_\_\_\_\_

d.  $11 \times (45 - 58) = 11 \times 45 + 11 \times 58$  \_\_\_\_\_

**2. Find the value of the expression below using the distributive property.**

$12 \times (37 + n)$  if  $n = 72$

$= 12 \times 37 + 12 \times \underline{\hspace{2cm}}$

$= \underline{\hspace{2cm}} + \underline{\hspace{2cm}}$

$= \underline{\hspace{2cm}}$

$0.5 \times (45 + n)$  if  $n = 45$

$= 0.5 \times 45 + 0.5 \times \underline{\hspace{2cm}}$

$= \underline{\hspace{2cm}} + \underline{\hspace{2cm}}$

$= \underline{\hspace{2cm}}$

$11 \times (15 + n)$  if  $n = 25$

$= 11 \times 15 + 11 \times \underline{\hspace{2cm}}$

$= \underline{\hspace{2cm}} + \underline{\hspace{2cm}}$

$= \underline{\hspace{2cm}}$

$10 \times (20 + n)$  if  $n = 10$

$= 10 \times 20 + 10 \times \underline{\hspace{2cm}}$

$= \underline{\hspace{2cm}} + \underline{\hspace{2cm}}$

$= \underline{\hspace{2cm}}$

$50 \times (5 + n)$  if  $n = 0.5$

$= 50 \times 5 + 50 \times \underline{\hspace{2cm}}$

$= \underline{\hspace{2cm}} + \underline{\hspace{2cm}}$

$= \underline{\hspace{2cm}}$

$75 \times (11 + n)$  if  $n = 5$

$= 75 \times 11 + 75 \times \underline{\hspace{2cm}}$

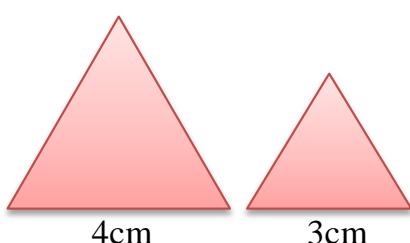
$= \underline{\hspace{2cm}} + \underline{\hspace{2cm}}$

$= \underline{\hspace{2cm}}$

**3. Find the value of p to make the equation true.**

$$77 \times 99 = 77 \times 88 + 77 \times p$$

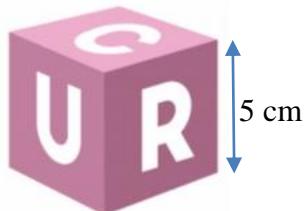
**4. Find the sum of the perimeter of the equilateral triangles below by using the distributive property.**



Solution:

$$\text{Total Perimeter} = P1 + P2 = 3 \times (4 + 3) = \underline{\hspace{2cm}}$$

**5. Solve for the total surface area of the cube shown below.**



Solution:

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Answer Key

1.

- a. True
- b. False
- c. True
- d. False

2.

$$\begin{aligned}12 \times (37 + n) &\quad \text{if } n = 72 \\&= 12 \times 37 + 12 \times 72 \\&= 444 + 864 \\&= 1308\end{aligned}$$

$$\begin{aligned}0.5 \times (45 + n) &\quad \text{if } n = 45 \\&= 0.5 \times 45 + 0.5 \times 45 \\&= 22.5 + 22.5 \\&= 45\end{aligned}$$

$$\begin{aligned}11 \times (15 + n) &\quad \text{if } n = 25 \\&= 11 \times 15 + 11 \times 25 \\&= 165 + 275 \\&= 440\end{aligned}$$

$$\begin{aligned}10 \times (20 + n) &\quad \text{if } n = 10 \\&= 10 \times 20 + 10 \times 10 \\&= 200 + 100 \\&= 300\end{aligned}$$

$$\begin{aligned}50 \times (5 + n) &\quad \text{if } n = 0.5 \\&= 50 \times 5 + 50 \times 0.5 \\&= 250 + 25 \\&= 275\end{aligned}$$

$$\begin{aligned}75 \times (11 + n) &\quad \text{if } n = 5 \\&= 75 \times 11 + 75 \times 5 \\&= 825 + 375 \\&= 1,200\end{aligned}$$

3. 11

4. 21 cm

5. 150 sq. cm