

Algebra CC
Assignment #4
Distributive Property

1. Using the equivalent expressions provided find the value of the product on the left by evaluating the expression on the right.

(a) $5(42) = 5(40 + 2)$

(b) $3(27) = 3(25 + 2)$

(c) $5(58) = 5(60 - 2)$

2. Simplify the following expressions using the distributive property. Show your calculations.

(a) $2(4x + 2)$

(b) $4(3x - 1)$

(c) $3(7 - x)$

(d) $\frac{36x + 21}{3}$

(e) $\frac{18 - 36x}{4}$

(f) $\frac{3(4x + 8)}{6}$

3. Using your knowledge of the distributive property, rewrite the following and evaluate without using your calculator. See Problem #1 if you need a hint how to do these.

(a) $6(38) =$

(b) $7(35) =$

4. Nate noticed that when using the distributive property you multiply the term outside the parenthesis by **each** term inside. Using his realization see if you can multiply the following using the distributive property.

(a) $3(246) = 3(200 + 40 + 6)$

(b) $2(3269) = 2(3000 + 200 + 60 + 9)$

(c) $3(2x^2 + 4x + 6)$

(d) $2(5x^3 + 2x^2 + 6x + 9)$

5. In the lesson we saw that we can multiply 2 digit numbers by using the distributive property twice. Use this knowledge to multiply the following terms. Show the calculations that lead to you answers.

(a) $(22)(31)$

(b) $(52)(11)$

6. Which of the following is equivalent to $(2x + 2)(3x + 1)$? It may help to use problem #5(a) as a reference.

(1) $6x^2 + 2$

(2) $5x^2 + 8x + 3$

(3) $6x^2 + 8x + 2$

(4) $16x^3$

R1 – R8: a) Tell whether each sentence is true or false.

b) If the sentence is true, state the property (commutative or associative) that is illustrated.

R1. $357 + 19 = 19 + 357$

R2. $(73 \times 68) \times 92 = 73 \times (68 \times 92)$

R3. $(24 \div 6) \div 2 = 24 \div (6 \div 2)$

R4. $2 \div 1 = 1 \div 2$

R5. $25 - 7 = 7 - 25$

R6. $18(3.6) = 3.6(18)$

R7. $9 + (0.3 + 0.7) = (9 + 0.3) + 0.7$

R8. $(19 - 8) - 5 = 19 - (8 - 5)$

R9. Andrew received a 95 on his last test and the only question he got wrong was the following.

Evaluate: $x^2 - 2(x - 3)$ when $x = 3$.

Andrews work:

$$\begin{aligned} &= x^2 - 2(x - 3) \\ &= 3^2 - 2(3 - 3) \\ &= 3^2 - 2(0) \\ &= 9 - 2(0) \\ &= 7(0) \\ &= 0 \end{aligned}$$

(a) Read through the question and Andrew's work. Find and circle his mistake.

(b) Explain what he did wrong and what he should have done.

1. (a) 210 (b) 81 (c) 290

2. (a) $8x + 4$ (b) $12x - 4$ (c) $21 - 3x$ (d) $12x + 7$ (e) $4.5 - 9x$ (f) $2x + 4$

3. (a) 228 (b) 245

4. (a) 738 (b) 6,538 (c) $6x^2 + 12x + 18$ (d) $10x^3 + 4x^2 + 12x + 18$

5. (a) 682 (b) 572

6. Choice 3

R1. True, Commutative property of addition

R2. True – Associative property of multiplication

R3. False

R4. False

R5. False

R6. True – Commutative property of multiplication

R7. True – Associative property of addition

R8. False

