Name _____ Date _____

Master 6.24

Extra Practice 5

Lesson 6.5: Solving Equations Involving the Distributive Property

1. Solve each equation using the distributive property.
Verify the solution.
a) $5(a + 2) = -5$ **b)** $4(p - 6) = -4$
c) $10(y + 3) = 10$ **d)** $7(r - 6) = 7$

2. Solve each equation.
a) $-7(b + 6) = -84$ **b)** $-5(q - 11) = 70$
c) $-9(d - 3) = -45$ **d)** $-6(f - 5) = 36$

3. At the fair, 5 friends each bought an $8 meal voucher and one ice-cream voucher.
The total cost of the vouchers was $55.
What was the price of an ice-cream voucher?
a) Choose a variable to represent the price of an ice-cream voucher.
Write an equation to model this problem.
b) Solve the equation using the distributive property.
c) Verify the solution. Explain your thinking in words.

★ Write a sentence!

4. Scott bought 54 m of fencing to enclose a rectangular plot of land.
The width of the rectangular plot is 12 m.
Assume Scott uses all the fencing.
What is the length of the rectangular plot of land?
a) Choose a variable to represent the length of the rectangular plot of land.
Write an equation to model this problem.
b) Solve the equation using the distributive property.
c) Verify the solution. Explain your thinking in words.

★ Write a sentence!

5. Heather chose an integer.
She added 9, then multiplied the sum by –4. The product was –16.
Which integer did Heather choose?
a) Write an equation you can use to solve the problem.
b) Solve the equation.

★ Sentence!

6. Solve each equation.
a) $-7(a + 3) = -14$ **b)** $-5(7 - r + 11) = 10$
c) $-7(b - 3) = -13$ **d)** $-6(-3 + t - 5) = 10$

Extra Practice 5

KEY

1a) $5(a+2) = -5$

$5a + 10 \overset{-10}{=} -5 \overset{-10}{}$

$\frac{5a}{5} = \frac{-15}{5}$

$a = -3$

verify $5(-3+2) = -5$

$5(-1) = -5$

$-5 = -5$

✓ ✓

b) $4(p-6) = -4$

$4p - 24 \overset{+24}{=} -4 \overset{+24}{}$

$\frac{4p}{4} = \frac{20}{4}$

$p = 5$

verify $4(5-6) = -4$

$4(-1) = -4$

$-4 = -4$

✓ ✓

c) $10(y+3) = 10$

$10y + 30 \overset{-30}{=} 10 \overset{-30}{}$

$\frac{10y}{10} = \frac{-20}{10}$

$y = -2$

verify $10(-2+3) = 10$

$10(1) = 10$

$10 = 10$

✓ ✓

d) $7(r-6) = 7$

$7r - 42 \overset{+42}{=} 7 \overset{+42}{}$

$\frac{7r}{7} = \frac{49}{7}$

$r = 7$

verify $7(7-6) = 7$

$7(1) = 7$

$7 = 7$

✓ ✓

2 a) $-7(b+6) = -84$

$-7b - 42 \overset{+42}{=} -84 \overset{+42}{}$

$\frac{-7b}{-7} = \frac{-42}{-7}$

$b = 6$

b) $-5(q-11) = 70$

$-5q + 55 \overset{-55}{=} 70 \overset{-55}{}$

$\frac{-5q}{-5} = \frac{15}{-5}$

$q = -3$

3] $5(8+i) = 55$

$40 - 40 + 5i = 55 - 40$

$\frac{5i}{5} = \frac{15}{5}$

$i = 3$

verify $5(8+3) = 55$

$5(11) = 55$

$55 = 55$ ✓ ✓

★ the ice cream voucher cost 3 $

4] $2(l+12) = 54$

$2l + 24 - 24 = 54 - 24$

$\frac{2l}{2} = \frac{30}{2}$

$l = 15$

verify $2(15+12) = 54$

$2(27) = 54$

$54 = 54$ ✓ ✓

★ the length of the plot is 15 m

5] $-4(n+9) = -16$

$-4n - 36 + 36 = -16 + 36$

$\frac{-4n}{-4} = \frac{20}{-4}$

$n = -5$

verify $-4(-5+9) = -16$

$-4(4) = -16$

$-16 = -16$

★ heather chose the integer -5

6. a) $-7(a+3) = -14$

$-7a - 21 + 21 = -14 + 21$

$\frac{-7a}{-7} = \frac{7}{-7}$

$a = -1$

b) $-5(7-r+11) = 10$

$-35 + 5r - 55 = 10$

$5r - 90 + 90 = 10 + 90$

$\frac{5r}{5} = \frac{100}{5}$

$r = 20$