M8 6.5 Solving Equations Involving the Distributive Property

Name _____
Blk _____

Review

The Distributive Property

Integers

$3 \times 6 = 3(5+1) = (3\times5) + (3\times1) = 18$

$15 + 3$

Algebra

$5(x-7) = 5\overline{)5x - 35}$ (x | −7) $\quad 5x-35$

Array Model (Better)

$3(c+9) \rightarrow 3\overline{)3c + 27}$ (c | +9) $\quad 3c+27$

New

Applying the Distributive Property to solve Algebraic Equations!

Ex 1 pdf

Bob is planting trees. He needs 11 trees for the sides of his yard. He wants all the extra trees for the middle. Trees cost $12 each, and Bob has $336. How many trees can he get for the middle section?

1) Let m = middle trees

2) Write equation and solve

$12(m+11) = 336$

$12\overline{)12m + 132}$ (m | +11)

$12m + 132 = 336$

$-132 \quad -132$

$12 \cdot m = 204$

$\div 12 \quad \div 12$

$m = 17$

3) check!

$12(17+11) = 336$

$12(28) = 336$

$336 = 336$ ✓

Bob can get 17 trees for the middle.

Ex 2 Solve $14 = 3(x+4)$

1) apply distributive property (d.p.)

	x	+4
3	3x	+12

2) solve

$14 = 3(x+4)$

$14 = 3x + 12$

$-12 \quad -12$

$2 = 3x$

$\div 3 \quad \div 3$

$\frac{2}{3} = x$ or $0.\overline{66} = x$

↑ more accurate

3) check!

$14 = 3\left(\frac{2}{3} + 4\right)$

$14 = 3\left(4\frac{2}{3}\right)$

$14 = 3 \cdot \frac{14}{3} = \frac{3 \cdot 14}{3}$

$14 = 14$ ✓

Ex 3 Solve $-2(10 - p + 1) = -21$

1) apply d.p.

	10	−p	+1
−2	−20	+2p	−2

2) solve

$-20 + 2p - 2 = -21$ (combine)

$-22 + 2p = -21$

$+22 \quad +22$

$2p = 1$

$\div 2 \quad \div 2$

$p = \frac{1}{2}$ or 0.5

3) check!

$-2(10 - \frac{1}{2} + 1) = -21$

$-2(10.5) = -21$

$-21 = -21$ ✓

$y = -2$

$(-y + 2)$

$-(-2) + 2$

$+2 + 2 = 4$

pdf

HW: A 4, 5 B 6, 8, 17 C 9, 10, 14