

SAMDEB

1) Solve a) $3x - 11 = 52$

$$3x - 11 + 11 = 52 + 11$$

$$3x = 63$$

$$\frac{3x}{3} = \frac{63}{3}$$

$$x = 21$$

b) $\frac{n}{-4} + 5 = -8$

$$\frac{n}{-4} + 5 - 5 = -8 - 5$$

$$\frac{n}{-4} = -13$$

$$(-4) \times \frac{n}{-4} = -13 \times (-4)$$

$$n = 52$$

Expand

2) a) $10(9x - 8)$

$$90x - 80$$

b) $3(-2g + 7)$

$$-6g + 21$$

3) Write an equation and SOLVE for the following:

a) "7 more than a third of a number is 11"

b) Double a number reduced by 3 is 19

3a) $\frac{n}{3} + 7 = 11$

$$\frac{n}{3} + 7 - 7 = 11 - 7$$

$$\frac{n}{3} = 4$$

$$3 \times \frac{n}{3} = 4 \times 3$$

$$n = 12$$

3b) $2n - 3 = 19$

$$2n - 3 + 3 = 19 + 3$$

$$2n = 22$$

$$\frac{2n}{2} = \frac{22}{2}$$

$$n = 11$$

Mental Math

4) 35% of 80

$$10\% \text{ of } 80 = 8$$

$$\times 3$$

$$30\% \text{ of } 80 = 24$$

$$5\% \text{ of } 80 = 4$$

$$35\% \text{ of } 80 = 24 + 4 = 28$$

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$$x = 21$$

b) $\frac{n}{-4} + 5 = -8$

$$\frac{n}{-4} + 5 - 5 = -8 - 5$$

$$\frac{n}{-4} = -13$$

$$n = +52$$

Expand

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$$2n - 3 = 19$$

$$2n - 3 + 3 = 19 + 3$$

$$\frac{2n}{2} = \frac{22}{2}$$

$$n = 11$$

$$\frac{n}{3} = 4$$

$$n = 12$$

$$n = 12$$

Mental Math

4) 35% of 80

$$\begin{array}{r} 10\% \text{ of } 80 = 8 \\ \times 3 \qquad \qquad \times 3 \\ \hline 30\% \text{ of } 80 = 24 \end{array}$$

$$\begin{array}{r} 10\% \text{ of } 80 = 8 \\ 5\% \text{ of } 80 = 4 \end{array}$$

$$\begin{array}{r} 30\% + 5\% \\ 35\% \text{ of } 80 = 24 + 4 \\ = 28 \end{array}$$

$$\begin{aligned} 4a) & 7(3+8) \\ & 7(11) \\ & 77 \end{aligned}$$

$$\begin{aligned} & 7 \times 3 + 7 \times 8 \\ & 21 + 56 \\ & 77 \end{aligned}$$

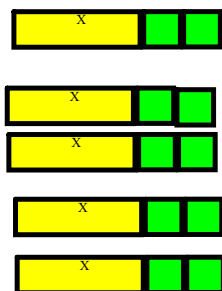
$$\begin{aligned} b) & 5(7-2) \\ & 5 \times 5 \\ & 25 \end{aligned}$$

$$\begin{aligned} & 5 \times 7 - 5 \times 2 \\ & 35 - 10 \\ & 25 \end{aligned}$$

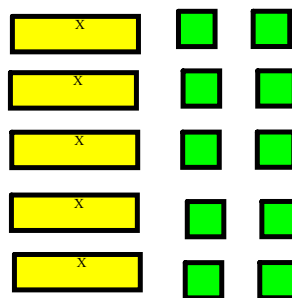
$$\begin{aligned} c) & -2(9-4) \quad [9+(-4)] \quad -2 \times 9 + -2 \times -4 \\ & -2(5) \quad \quad \quad -18 + (+8) \\ & -10 \quad \quad \quad -10 \end{aligned}$$

The answers are the same for each pair.

5. $5(x+2)$

5 groups of $x+2$

$5x + 10$

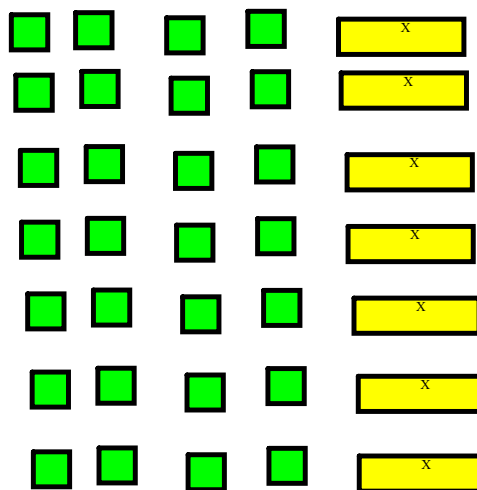


5 x's and ten 1's

6. $7(4+5)$

7 groups of
 $4+5$

$28 + 7x$



28 ones and 7 x's

$$7a) 2(x+10) \\ 2x+20$$

$$c) 10(f+2) \\ 10f+20$$

$$e) 8(8+y) \\ 64+8y$$

$$g) 3(9+p) \\ 27+3p$$

$$i) 7(g+15) \\ 7g+105$$

$$b) 5(a+1) \\ \boxed{}$$

$$d) 6(12+g) \\ \boxed{}$$

$$f) 5(5+b) \\ \boxed{}$$

$$h) 4(11+r) \\ \boxed{}$$

$$j) 9(7+h) \\ \boxed{}$$

$$-3(2x-7)$$

$$-2(-5t + 8)$$

Solving Equations that Involve the Distributive Property

The Distributive property may also appear in solving equations.

When it does, **first you have to apply the distributive property, then solve as you normally would.**

outside Bracket, you multiply each term on inside bracket. Then solve as usual

Solve the following:

(a) $2(x + 4) = 18$

$$2x + 8 = 18$$

$$2x + \cancel{8} = 18 - \cancel{8}$$

$$2x = 10$$

$$\frac{2x}{2} = \frac{10}{2}$$

$$\boxed{x = 5}$$

(b) $3(x - 5) = 9$

$$3x - 15 = 9$$

$$3x - \cancel{15} = 9 + \cancel{15}$$

$$3x = 24$$

$$\frac{3x}{3} = \frac{24}{3}$$

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Involve the Distributive Property

The Distributive property may also appear in solving equations.

When it does, **first you have to apply the distributive property, then solve as you normally would.**

Solve the following:

(a) $2(x + 4) = 18$

(b) $3(x - 5) = 9$

$$\begin{aligned} \text{a) } 2(x+4) &= 18 \\ 2x+8 &= 18 \\ 2x+8-8 &= 18-8 \\ 2x &= 10 \\ \frac{2x}{2} &= \frac{10}{2} \\ x &= 5 \end{aligned}$$

LS	RS
$2(x+4)$	18
$2(5+4)$	
2×9	
18	

b)

$$\begin{aligned} 3(x-5) - 9 &= 9 \\ 3x - 15 - 9 &= 9 \\ 3x - 24 &= 9 \\ 3x - 24 + 24 &= 9 + 24 \\ 3x &= 33 \\ \frac{3x}{3} &= \frac{33}{3} \\ x &= 11 \end{aligned}$$

$$\begin{aligned} 3x + (-15) + (-9) \\ \text{or } 3x + (-24) \end{aligned}$$

LS	RS
$3(x-5) - 9$	9
$3(11-5) - 9$	
$3 \times 6 - 9$	
$18 - 9$	
9	

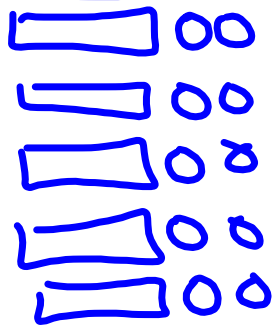


Word Problem

me and 4 friends

Ex)

I have 4 friends. We each have a package of cookies and we each have 2 cookies that are not in the package. If we have 50 cookies in total, how many cookies are in each package?



$$x + 2$$

let x represent
of cookies
in the pack

$$5(x + 2) = 50$$

$$5x + 10 = 50$$

$$5x + \cancel{10} - 10 = 50 - 10$$

$$5x = 40$$

$$\frac{5x}{5} = \frac{40}{5}$$

$$x = 8$$

There is 8 cookies
in each package.



Word Problem

Ex)

I have 4 friends. We each have a package of cookies and we each have 2 cookies that are not in the package. If we have 50 cookies in total, how many cookies are in each package?

let c represent
the package.

hint : How many people?

$$5(c + 2) = 50$$

$$5c + 10 = 50$$

$$5c + 10 - 10 = 50 - 10$$

2) Bill's Mom pays Bill \$0.25 for each sock he folds. But gave him \$20 for being a great son. If she gave him \$25.50, then how many socks did he fold? (Show work)

Write an equation.
Let n represent the # of sock Bill folded.

$$0.25n + 20 = 25.50$$

$$0.25n + \cancel{20} = 25.50 - \cancel{20}$$

$$\frac{0.25n}{0.25} = \frac{5.50}{0.25}$$

Bill folded 22 socks $n = 22$



Word Problem

Ex)

I have 4 friends. We each have a package of cookies and we each have 2 cookies that are not in the package. If we have 50 cookies in total, how many cookies are in each package?

b = the number of cookies in one package

$b + 2$ = the number of cookies each person has

$$5(b + 2) = 50$$

$$5b + 10 = 50$$

$$5b + 10 - 10 = 50 - 10$$

$$5b = 40$$

$$\frac{5b}{5} = \frac{40}{5}$$

$$b = 8$$

$$b = 8$$

Each package has 8 cookies.

$$\begin{array}{l} \text{LS} \\ 5(b+2) \\ 5(8+2) \\ 5 \times 10 \\ 50 \end{array}$$

$$\begin{array}{l} \text{RS} \\ 50 \end{array}$$

Class/Homework

pg. 342 #1, 13a,b, 4,

Homework pg. 347 # 4-5

Test PART 1 outline

5 MC

6 Short Response

#1 Draw tiles and solve an equation

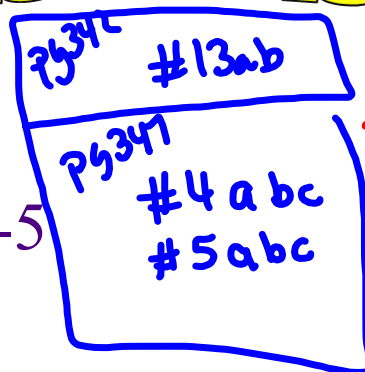
#2 Use Algebra tiles or box method to prove distributive property

#3 For each problem, state the variable, write and solve the equation, verify and give a statement. (Like warm up on Friday)

#4 Solve Ex) $2(x-3)=16$

#5 For each of the following tell whether the pair of expressions is equivalent or not.

#6 (Is it correct if yes then verify if no then redo)



pg. 342 # 7-16, 18,19 Reflect

$$7a) 2(x+10) \\ 2x+20$$

$$b) 5(a+1) \\ 5a+5$$

$$c) 10(f+2) \\ 10f+20$$

$$d) 6(12+g) \\ 72+7g$$

$$e) 8(8+y) \\ 64+8y$$

$$f) 5(s+6) \\ 5s+30$$

$$g) 3(9+p) \\ 27+3p$$

$$h) 4(11+r) \\ 44+4r$$

$$i) 7(g+15) \\ 7g+105$$

$$j) 9(7+h) \\ 63+9h$$

$$8a) 3(x-7)$$

$$3x-21$$

$$b) 4(a-3)$$

$$4a-12$$

$$c) 9(h-5)$$

$$9h-45$$

$$d) 7(g-f)$$

$$56-7f$$

$$e) 5(l-s)$$

$$5-5s$$

$$f) 6(p-2)$$

$$6p-12$$

$$g) 8(11-t)$$

$$88-8t$$

$$h) 2(15-v)$$

$$30-2v$$

$$i) 10(b-8)$$

$$10b-80$$

$$j) 11(c-4)$$

$$11c-44$$

$$9. \text{Per} = s + t + s + t + s$$

$$= b + h + b + h$$

$$\text{or } 2b + 2h$$

$$\text{or}$$

$$\text{Per} = 2(b+h)$$

$$= 2b + 2h$$

(Discuss)

$$10. \quad hb = bh$$

When you multiply order does not matter

$$2 \times 3 = 3 \times 2$$

therefore
 $h \times b = b \times h$


$$11. \quad 9(6-t)$$

$$= 54 - 9t$$

which is (a)


$$12. \quad a) \quad -6(c+4)$$

$$-6c - 24$$

$$b) \quad -8(a-5) \quad (-8)(-5)$$


$$c) \quad 10(f-7)$$

$$10f - 70$$


$$d) \quad 3(-8-g)$$


$$e) \quad -8(8-y)$$

$$-64 + 8y$$

$$-64 - (-8y)$$

$$-64 + 8y$$

$$f) \quad -2(-st+5)$$


$$g) \quad -5(-t-8)$$

$$5t + 40$$

$$5t - (-40)$$

$$h) \quad -9(9-w)$$

$$-81 - (-9w)$$


13. a) $2x+20$ and $2(x+20)$

not equivalent

$$2(x+20)$$

$$= 2x+40$$

They didn't multiply the 20 by 2.

b) $3x+7$ and $10x$

not equivalent

could model
to show

$3x+7x$ equals $10x$, but you don't add the 3 and the 7 in $3x+7$ because they are unlike terms.

c) $6+2t$ and $2(t+3)$

equivalent

$$2(t+3)$$

$2t+6$ which is the same as $6+2t$
(add in any order).

d) $9+x$ and $x+9$

equivalent

you can add in any order.

$$14. \quad 15 \times 25 + 15 \times 14 \quad \text{OR} \quad 15(25+14)$$

Jersey for each
Hat for each
(Jersey and hat together)

$$b) \quad 375 + 210$$

$$585$$

$$15(39)$$

$$585$$

$$15k)(b)$$

$$5 \times 9 + 5 \times 8$$

$$45 + 40$$

$$85$$

$$\text{OR} \quad 5(9+8)$$

$$5(17)$$

$$85$$

$$16. \quad \text{Column 1}$$

$$\text{Column 2}$$

$$a) \quad 6t - 6$$

$$6t - 36$$

$$(v)$$

$$b) \quad -6(t-6)$$

$$-6t + 36$$

$$(ii)$$

$$c) \quad -6(t+6)$$

$$-6t - 36$$

$$(iii)$$

$$d) \quad 6(6+t)$$

$$36 + 6t$$

$$(i)$$

$$\begin{array}{l}
 18. \quad 7(\underline{5+y-2}) \\
 \quad 7(3+y) \\
 \quad 21+7y
 \end{array}$$

$$\begin{array}{l}
 \text{or } 7(5+y-2) \\
 35+7y-14 \\
 21+7y
 \end{array}$$

$$\begin{array}{l}
 b) \quad -3(-t+8-3) \\
 \quad -3(-t+5) \\
 \quad 3t-15
 \end{array}$$

$$\begin{array}{l}
 c) \quad -8(\underline{-9+s+5}) \\
 \quad -8(-4+s) \\
 \quad 32+(-8s) \\
 \quad 32-8s
 \end{array}$$

$$\begin{array}{l}
 d) \quad 12(\underline{-10-p+7}) \\
 \quad 12(-3-p) \\
 \quad -36-12p
 \end{array}$$

$$19 \text{ a) } 2(7+b+c) \\ 14 + 2b + 2c$$

$$\text{b) } 11(-6+e-f) \\ -66 + 11e - 11f$$

$$\text{c) } -1(-r+s-8) \\ r - s + 8$$

$$\text{d) } -10(-6-v-w) \\ 60 + 10v + 10w$$

$$\text{e) } 5(j-1s-k) \\ 5j - 5s - 5k$$

$$\text{f) } -4(-g+12-h) \\ 4g - 48 + 4h$$