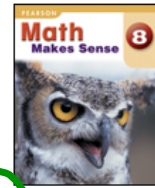




Warm Up Grade 8

Distribute and solve



1) a) $6(x - 8) = 24$
 $6x - 48 = 24$
 $6x - 48 + 48 = 24 + 48$
 $6x = 72$
 $\div 6 \quad \div 6$
 $x = 12$

b) $2(k + 3) = 16$
 $2k + 6 = 16$
 $2k + 6 - 6 = 16 - 6$
 $2k = 10$
 $\div 2 \quad \div 2$
 $k = 5$

c) $-3(x - 7) = 9$
 $-3x + 21 = 9$
 $-3x + 21 - 21 = 9 - 21$
 $-3x = -12$
 $\div -3 \quad \div -3$
 $x = 4$

$$6(x - 8)$$

~~1~~ oooooo → 1 group
but need 6 group

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

$$\begin{array}{l} 7a) 2(x+10) \\ 2x+20 \end{array}$$

$$\begin{array}{l} b) 5(a+1) \\ 5a+5 \end{array}$$

$$\begin{array}{l} c) 10(f+2) \\ 10f+20 \end{array}$$

$$\begin{array}{l} d) 6(12+g) \\ 72+7g \end{array}$$

$$\begin{array}{l} e) 8(8+y) \\ 64+8y \end{array}$$

$$\begin{array}{l} f) 5(s+6) \\ 5s+30 \end{array}$$

$$\begin{array}{l} g) 3(9+p) \\ 27+3p \end{array}$$

$$\begin{array}{l} h) 4(11+r) \\ 44+4r \end{array}$$

$$\begin{array}{l} i) 7(g+15) \\ 7g+105 \end{array}$$

$$\begin{array}{l} j) 9(7+h) \\ 63+9h \end{array}$$

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

$$3x-21$$

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

$$4a-12$$

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

$$9h-45$$

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

$$56-7f$$

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

$$5-5s$$

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

$$6p-12$$

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

$$88-8t$$

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

$$30-2v$$

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

$$10b-80$$

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

$$11c-44$$

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

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

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

$$\text{or}$$

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

$$= 2b + 2h$$

(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)


$$12. \quad a) \quad -6(c+4) \\ -6c - 24$$

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


$$c) \quad 10(f-7) \\ 10f - 70$$

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


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

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


$$g) \quad -5(-t-8) \quad 5t - (-40) \\ 5t + 40$$

$$h) \quad -9(9-w) \quad -81 - (-9w)$$


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.

$$14. \quad \begin{array}{l} 15 \times 25 + 15 \times 14 \\ \text{Jersey for each} \quad \text{Hat for each} \end{array} \quad \text{OR} \quad 15(25+14) \\ \text{(Jersey and hat together)}$$

$$b) \quad \begin{array}{r} 375 + 210 \\ 585 \end{array}$$

$$\begin{array}{r} 15(39) \\ 585 \end{array}$$

15k)(b)

$$\begin{array}{r} 5 \times 9 + 5 \times 8 \\ 45 + 40 \\ 85 \end{array}$$

$$\text{OR} \quad \begin{array}{r} 5(9+8) \\ 5(17) \\ 85 \end{array}$$

16. Column 1

Column 2

$$a) \quad \begin{array}{r} 6t - 6 \\ 6t - 36 \end{array}$$

(iv)

$$b) \quad \begin{array}{r} -6(t-6) \\ -6t + 36 \end{array}$$

(ii)

$$c) \quad \begin{array}{r} -6(t+6) \\ -6t - 36 \end{array}$$

(iii)

$$d) \quad \begin{array}{r} 6(6+t) \\ 36 + 6t \end{array}$$

(i)

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

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

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

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

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

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

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

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

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

$$\text{e) } 5(j - 15 - k) \\ 5j - 75 - 5k$$

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

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$$\begin{aligned}
 4a) \quad 3(x+5) &= 36 \\
 3x+15 &= 36 \\
 3x+15-15 &= 36-15 \\
 3x &= 21 \\
 \frac{3x}{3} &= \frac{21}{3} \\
 x &= 7
 \end{aligned}$$

$$\begin{array}{l}
 \text{LS} \\
 3(x+5) \\
 3(7+5) \\
 3 \times 12 \\
 36 \\
 \text{RS} \\
 36
 \end{array}$$

$$\begin{aligned}
 b) \quad 4(p-6) &= 36 \\
 4p-24 &= 36 \\
 4p-24+24 &= 36+24 \\
 4p &= 60 \\
 \frac{4p}{4} &= \frac{60}{4} \\
 p &= 15
 \end{aligned}$$

$$\begin{array}{l}
 \text{LS} \\
 4(p-6) \\
 4(15-6) \\
 4 \times 9 \\
 36 \\
 \text{RS} \\
 36
 \end{array}$$

$$\begin{aligned}
 c) \quad 5(y+2) &= 25 \\
 5y+10 &= 25 \\
 5y+10-10 &= 25-10 \\
 5y &= 15 \\
 \frac{5y}{5} &= \frac{15}{5} \\
 y &= 3
 \end{aligned}$$

$$\begin{array}{l}
 \text{LS} \\
 5(y+2) \\
 5(3+2) \\
 5 \times 5 \\
 25 \\
 \text{RS} \\
 25
 \end{array}$$

$$\begin{aligned}
 d) \quad 10(a+8) &= 30 \\
 10a+80 &= 30 \\
 10a+80-80 &= 30-80 \\
 10a &= -50 \\
 \frac{10a}{10} &= \frac{-50}{10} \\
 a &= -5
 \end{aligned}$$

$$\begin{array}{l}
 \text{LS} \\
 10(a+8) \\
 10(-5+8) \\
 10 \times 3 \\
 30 \\
 \text{RS} \\
 30
 \end{array}$$

$$\begin{aligned}
 5a) \quad & -2(a+4) = 18 \\
 & -2a - 8 = 18 \\
 & -2a - 8 + 8 = 18 + 8 \\
 & -2a = 26 \\
 & \frac{-2a}{-2} = \frac{26}{-2} \\
 & a = -13
 \end{aligned}$$

$$-2a + (-8)$$

$$\begin{array}{ll}
 \text{LS} & \text{RS} \\
 -2(a+4) & 18 \\
 -2(-13+4) & \\
 -2 \times -9 & \\
 18 &
 \end{array}$$

$$\begin{aligned}
 b) \quad & -3(r-5) = -27 \\
 & -3r + 15 = -27 \\
 & -3r + 15 - 15 = -27 - 15 \\
 & -3r = -42 \\
 & \frac{-3r}{-3} = \frac{-42}{-3} \\
 & r = +14
 \end{aligned}$$

$$\begin{array}{ll}
 \text{LS} & \text{RS} \\
 -3(r-5) & -27 \\
 -3(14-5) & \\
 -3 \times 9 & \\
 -27 &
 \end{array}$$

$$\begin{aligned}
 c) \quad & 7(-y+2) = 28 \\
 & -7y + 14 = 28 \\
 & -7y + 14 - 14 = 28 - 14 \\
 & -7y = 14 \\
 & \frac{-7y}{-7} = \frac{14}{-7} \\
 & y = -2
 \end{aligned}$$

$$-y - 1(-2)$$

$$\begin{array}{ll}
 \text{LS} & \text{R} \\
 7(-y+2) & 28 \\
 7(-1(-2)+2) & \\
 7(2+2) & \\
 7 \times 4 & \\
 28 &
 \end{array}$$

$$\begin{aligned}
 d) \quad & -6(c-9) = -42 \\
 & -6c - (-54) = -42 \\
 & -6c - (-54) + (-54) = -42 + (-54) \\
 & -6c = -96 \\
 & \frac{-6c}{-6} = \frac{-96}{-6} \\
 & c = 16
 \end{aligned}$$

$$\begin{aligned}
 -6c + 54 & = -42 \\
 -6c + 54 - 54 & = -42 - 54 \\
 -6c & = -96
 \end{aligned}$$

$$\begin{array}{ll}
 \text{LS} & \text{Rj} \\
 -6(c-9) & -42 \\
 -6(16-9) & \\
 -6 \times 7 & \\
 -42 &
 \end{array}$$

b $c =$ cards started with

$$2(c+3) = 20$$

$$2c + 6 = 20$$

$$2c + 6 - 6 = 20 - 6$$

$$2c = 14$$

$$\frac{2c}{2} = \frac{14}{2}$$

$$c = 7$$

| | |
|---------------|----|
| LS | RS |
| $2(c+3)$ | 20 |
| $2(7+3)$ | |
| 2×10 | |
| 20 | |

He started with 7 cards.

7. Discuss.

8.



$$P = \text{stststst}$$

$$2b = 8w + 8w$$

$$2b = 16 + 2w$$

$$2b - 16 = 16 + 2w - 16$$

$$10 = 2w$$

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

$$5 = w$$

$$\begin{array}{l} \text{LS} \\ 2b \end{array}$$

$$\begin{array}{l} \text{RS} \\ 16 + 2w \\ 16 + 2 \times 5 \\ 16 + 10 \\ 26 \end{array}$$

The width is 5cm

9 n = price before reduced
 $n - 5$ = reduced price

$$b(n - 5) = 90$$

$$bn - 30 = 90$$

$$bn - 30 + 30 = 90 + 30$$

$$bn = 120$$

$$\frac{bn}{b} = \frac{120}{b}$$

$$n = 20$$

LS

RS

The regular price of the t-shirts was \$20.

Class/Homework

pg. 347 # 7, #8, #9, #10, ~~#12, #13, #14~~

Sheet Extra Prac 5 # 1(a,d), #2(a,d), #3, #5

Part 1 Test on _____

Pg 347 # 6, 8, 9, 10

6) Let $x \equiv$ # of cards Marc starts with

$$2(x+3) = 20$$

8) $2(w+8) = 26$

9) $6(T-5) = 90$

10) $8(T+6) = 264$

Attachments

Extra Practice 5 Solve equation using distributive prop.pdf