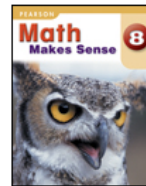




Warm Up Grade 8



Distribute and solve

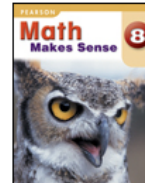
1) a) $6(x - 8) = 24$

b) $2(k + 3) = 16$

c) $-3(x - 7) = 9$



Warm Up Grade 8
Solutions



Distribute and solve

1) a) $6(x - 8) = 24$

$$6x - 48 = 24$$

$$6x - 48 + 48 = 24 + 48$$

$$6x = 72$$

$$\begin{array}{r} 6x = 72 \\ \div 6 \quad \div 6 \end{array}$$

$$\boxed{x = 12}$$

b) $2(k + 3) = 16$

$$2k + 6 = 16$$

$$2k + 6^{-6} = 16^{-6}$$

$$\begin{array}{r} 2k = 10 \\ \div 2 \quad \div 2 \end{array}$$

$$\boxed{k = 5}$$

c) $-3(x - 7) = 9$

$$-3x + 21 = 9$$

$$-3x + 21^{-21} = 9^{-21}$$

$$-3x = -12$$

$$\begin{array}{r} -3x = -12 \\ \div (-3) \quad \div (-3) \end{array}$$

$$\boxed{x = 4}$$

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)


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

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


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

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


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

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


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

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


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.

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

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

$$b) \quad 375 + 210$$

$$585$$

$$15(39)$$

$$585$$

$$15k(b)$$

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

$$45 + 40$$

$$85$$

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

$$5(17)$$

$$85$$

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

$$\text{Column 2}$$

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

$$6t - 36$$

$$(v)$$

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

$$-6t + 36$$

$$(ii)$$

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

$$-6t - 36$$

$$(iii)$$

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

$$36 + 6t$$

$$(i)$$

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

$$\begin{array}{l} -y \\ -(-2) \end{array}$$

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

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

$$\begin{array}{l} -6c + 54 = -42 \\ -6c + 54 - 54 = -42 - 54 \\ -6c = -96 \end{array}$$

$$\begin{array}{l} \text{LS} \\ -6(c-9) \\ -6(16-9) \\ -6 \times 7 \\ -42 \end{array} \quad \begin{array}{l} \text{R} \\ -42 \end{array}$$

b $c =$ cards started with

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

$$2c + 6 = 20$$

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

$$2c = 14$$

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

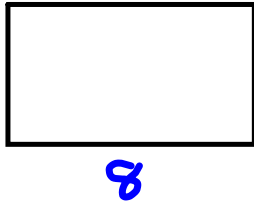
$$c = 7$$

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 _____

Attachments

Extra Practice 5 Solve equation using distributive prop.pdf