Homework: http://math.mnrt.net/

Name _____

[T7-05-10-27]

Distribution 1

◆ Distribution of multiplication over addition (axiom called distribution)

For all real numbers *a*, *b*, *c*,

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a (b + c) = a b + a c
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■ **Examples**

- $3\,(x+5) = 3\,x + 3 \cdot 5 = 3\,x + 15$
- $7\,x + 21 = 7\,(x+3)$
- $\frac{1}{2}\,x + 10 = \frac{1}{2}\,(x+5)$

■ **A. Rewrite using the distributive axiom**

[1] $5\,(x+4) =$ ____ + ____

[2] $10\,(4+x) =$ ____ + ____

[3] $3\,(y+2) =$ ____ + ____

[4] $7\,(x+\pi) =$ ____ + ____

[5] $9\,(a+b) =$ ____ + ____

[6] $a(x+b) =$ ____ + ____

[7] $\frac{1}{2}\,(y+2) =$ ____ + ____

[8] $\frac{1}{5}\,(5\,x+5) =$ ____ + ____

[9] $2\,x + 2 = 2\,($ ____ + ____ $)$

[10] $6 + 15\,x = 3\,($ ____ + ____ $)$

[11] $5\,y+25=$ (+)

[12] $\frac{x}{3}+\frac{2}{3}=$ (+)

[13] $100\,x+300=$ (+)

[14] $\frac{5}{7}\,x+\frac{3}{14}=$ (+)

■ B. Rewrite using the distributive axiom

[1] $3\,(x+8)=$

[2] $5\,(2+x)=$

[3] $5\,(2\,x+3)=$

[4] $\frac{1}{3}\,(3\,x+2)=$

[5] $\frac{2}{7}\,(7\,x+14)=$

[6] $\pi(x+2)=$

[7] $3\,(2\,x+5)=$

[8] $\frac{1}{\pi}\,(\pi\,x+1)=$

■ C. Rewrite using the distributive axiom.

[1] $3\,x+3=$

[2] $2\,x+6=$

[3] $10\,x+5=$

[4] $3\,x+15=$

[5] $25x + 30 =$

[6] $2x + 100 =$

[7] $21x + 49 =$

[8] $\pi x + \pi =$

[9] $2\pi x + 3\pi$

[10] $3\pi x + 15\pi =$

[11] $26 + 13x =$

[12] $35x + 14 =$

■ **D. Rewrite using the distributive axiom.**

[1] $\frac{x}{2} + \frac{1}{2} =$

[2] $\frac{2}{3}x + \frac{1}{3} =$

[3] $\frac{3x}{5} + \frac{2}{5} =$

[4] $\frac{3x}{5} + \frac{2}{10} =$

[5] $\frac{x}{\pi} + \frac{1}{2\pi} =$

[6] $\frac{x}{15} + \frac{3}{25} =$

Answers to T7-05-10-27

■ A. Rewrite using the distributive axiom

[1] $5x+20$ [2] $40+4x$ [3] $3y+6$ [4] $7x+7\pi$ [5] $9a+9b$ [6] $ax+ab$

[7] $\frac{y}{2}+1$ [8] $x+1$ [9] $2(x+1)$ [10] $3(2+5x)$ [11] $5(y+5)$ [12] $(x+2)$

[13] $1100(x+3)$ [14] $\frac{1}{7}(5x+\frac{3}{2})$

■ B. Rewrite using the distributive axiom

[1] $3x+24$ [2] $10+5x$ [3] $10x+15$ [4] $x+\frac{2}{3}$ [5] $2x+2$ [6] $\pi x+2\pi$

[7] $6x+15$ [8] $x+\pi$

■ C. Rewrite using the distributive axiom.

[1] $3(x+1)$ [2] $2(x+3)$ [3] $5(2x+1)$ [4] $3(x+5)$ [5] $5(5x+6)$

[6] $2(x+50)$ [7] $27(3x+7)$ [8] $\pi(x+1)$ [9] $\pi(2x+3)$ [10] $3\pi(x+5)$

[11] $13(2+x)$ [12] $7(5x+2)$

■ D. Rewrite using the distributive axiom.

[1] $\frac{1}{2}(x+1)$ [2] $(2x+1)$ [3] $(3x+2)$ [4] $\frac{1}{5}(3x+1)$

[5] $\frac{1}{\pi}(x+\frac{1}{2})$ [6] $\frac{1}{5}(\frac{x}{3}+\frac{3}{5})$