

Review II

① Distribute

$$9(4x + 20)$$

$$36x + 180$$

$$\frac{1}{3}(27 + 2x)$$

$$9 + \frac{2}{3}x$$

③ Solve

$$8x - 3 = 37$$

$$\begin{array}{r} +3 \quad +3 \\ \hline 8x = 40 \\ \hline \frac{8x}{8} = \frac{40}{8} \end{array}$$

$$x = 5$$

$$\frac{x}{9} + 7 = 10$$

$$\begin{array}{r} -7 \quad -7 \\ \hline 9(\frac{x}{9}) = (-7)9 \end{array}$$

$$x = 27$$

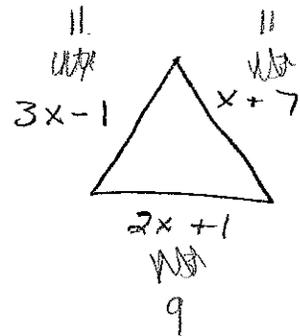
⑥ Perimeter of figure is 31 inches
What is the length of each side?

$$3x - 1 + x + 7 + 2x + 1 = 31$$

$$6x + 7 = 31$$

$$\begin{array}{r} -7 \quad -7 \\ \hline 6x = 24 \\ \hline \frac{6x}{6} = \frac{24}{6} \end{array}$$

$$x = 4$$

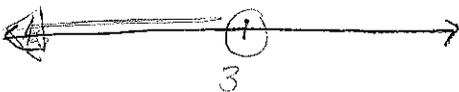


⑦ Solve & Graph

$$8 > 4x - 4$$

$$\begin{array}{r} +4 \quad +4 \\ \hline 12 > 4x \\ \hline \frac{12}{4} > \frac{4x}{4} \end{array}$$

$$3 > x$$



⑧

$$28 - 3y \leq 16$$

$$\begin{array}{r} -28 \quad -28 \\ \hline -3y \leq -12 \\ \hline -3 \quad -3 \end{array}$$

$$y \geq 4$$



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$$\begin{array}{r} (17) \quad 16.95 + .05x = 22.95 + .02x \\ \quad \quad \quad - .02x \quad \quad \quad - .02x \\ \hline \end{array}$$

$$\begin{array}{r} 16.95 + .03x = 22.95 \\ -16.95 \quad \quad \quad -16.95 \\ \hline \end{array}$$

$$\begin{array}{r} .03x = 6 \\ \quad \quad \quad .03 \quad \quad \quad .03 \\ \hline \end{array}$$

$$x = 200$$

$$\begin{array}{r} (18) \quad 44 + 30x = 99 + 25x \\ \quad \quad \quad - 25x \quad \quad \quad - 25x \\ \hline \end{array}$$

$$\begin{array}{r} 44 + 5x = 99 \\ -44 \quad \quad \quad -44 \\ \hline \end{array}$$

$$\begin{array}{r} 5x = 55 \\ \quad \quad \quad 5 \quad \quad \quad 5 \\ \hline \end{array}$$

$$x = 11$$

Write and solve an equation for each situation. Check the reasonableness of your solution.

17. Telephone Service One telephone company charges \$16.95 per month and \$.05 per minute for local calls. Another company charges \$22.95 per month and \$.02 per minute for local calls. For what number of minutes of local calls per month is the cost of the plans the same?

18. Fitness One health club charges a \$44 sign-up fee and \$30 per month. Another health club charges a \$99 sign-up fee and \$25 per month. For what number of months is the cost the same?

19. Carpentry Peter was building a porch. Placing boards of equal length from end to end, Peter found that 4 boards were 3 ft too long for the porch length, while 3 boards were 5 ft too short. How long was each board?

20. Flying You and a pilot friend decide to rent an airplane to do some sightseeing. One service charges \$100 plus \$80 per hour, while another charges \$250 plus \$70 per hour for the same airplane. At what number of hours is the cost the same?

$$\begin{array}{r} (19) \quad 4x - 3 = 3x + 5 \\ \quad \quad \quad - 3x \quad \quad \quad - 3x \\ \hline \end{array}$$

$$x - 3 = 5$$

$$+3 \quad +3$$

$$x = 8$$

$$\begin{array}{r} (20) \quad 100 + 80h = 250 + 70h \\ \quad \quad \quad - 70h \quad \quad \quad - 70h \\ \hline \end{array}$$

$$\begin{array}{r} 100 + 10h = 250 \\ -100 \quad \quad \quad -100 \\ \hline \end{array}$$

$$\begin{array}{r} 10h = 150 \\ \quad \quad \quad 10 \quad \quad \quad 10 \\ \hline \end{array}$$

$$h = 15$$

Review 111

① Distribute

$$7(8x-3)$$

$$56x-21$$

②

$$\frac{2}{5}(40+60x)$$

$$16+20x$$

③ Solve

$$\frac{1}{3}(8x-3) = 23$$

$$\frac{2x-1}{+1} = \frac{29}{+1}$$

$$\frac{2x}{2} = \frac{24}{2}$$

$$x = 12$$

④ $9(4x-10) + 4(3x-1) = 50$

$$36x-90 + 12x-4 = 50$$

$$\frac{48x-94}{+94} = \frac{50}{+94}$$

$$\frac{48x}{48} = \frac{144}{48}$$

$$x = 3$$

⑤

$$\frac{x}{9} + 3 = 6$$

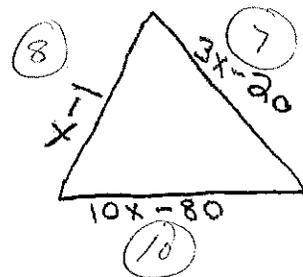
⑥ If the perimeter is 25 inches, what is the length of each side?

$$x-1 + 3x-20 + 10x-80 = 25$$

$$\frac{14x-101}{+101} = \frac{25}{+101}$$

$$\frac{14x}{14} = \frac{726}{14}$$

$$x = 9$$



⑦ Solve + Graph

⑧

$$\frac{9 < 5x+2}{-2} \quad \frac{-2}{-2}$$

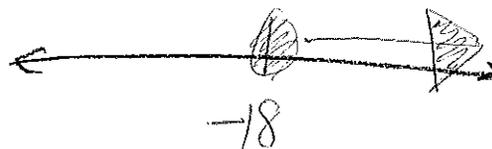
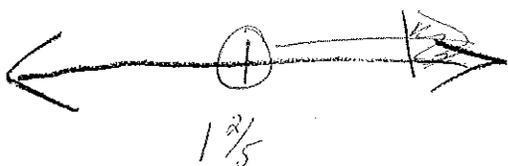
$$\frac{7 < 5x}{5} \quad \frac{5}{5}$$

$$1\frac{2}{5} < x$$

$$\frac{28 \geq x+10}{-10} \quad \frac{-10}{-10}$$

$$\frac{18 \geq -x}{-1} \quad \frac{-1}{-1}$$

$$-18 \leq x$$



UPS charges \$7 for the first pound, and \$0.20 for each additional pound. FedEx charges \$5 for the first pound and \$0.30 for each additional pound. How many pounds, p , will it take for UPS and FedEx to cost the same?

$$\begin{array}{r}
 7 + .2x = 5 + .3x \\
 - .2x \qquad - .2x \\
 \hline
 7 \qquad = \qquad 5 + .1x \\
 - 5 \qquad - 5 \\
 \hline
 2 \qquad = \qquad .1x \\
 10(2) = (.1x)(10) \\
 20 = x
 \end{array}$$

Lenny makes \$55,000 and is getting annual raises of \$2,500. Karl makes \$62,000, with annual raises of \$2,000. How many years, y , will it take for Lenny and Karl to make the same salary?

$$\begin{array}{r}
 55,000 + 2,500x = 62,000 + 2,000x \\
 - 2,000x \qquad - 2,000x \\
 \hline
 55,000 + 500x = 62,000 \\
 - 55,000 \qquad - 55,000 \\
 \hline
 500x = 7,000 \\
 \frac{500x}{500} = \frac{7,000}{500} \\
 x = 14
 \end{array}$$

Gordon is fixing up his home and must spend less than \$3,600 to hire carpenters and painters. Carpenters charge \$56 per hour and painters charge \$35 per hour.

Select the Inequality in standard form that describes this situation. Use the given numbers and the following variables.

x = the number of hours of carpentry

y = the number of hours of painting

$35x + 56y < 3,600$

$56 + x + 35 + y < 3,600$

$35 + x + 56 + y < 3,600$

$56x + 35y < 3,600$

