

Equations

Quiz Study Guide Key

$$1. \left(\frac{2p}{3} + \frac{p}{4} - \frac{1}{6} = \frac{7}{2} \right)$$

$$8p + 3p - 2 = 42$$

$$11p - 2 = 42$$

$$\frac{11p}{11} = \frac{44}{11}$$

$$p = 4$$

$$2. 12(y+5) = 13y+2$$

$$12y + 60 = 13y + 2$$

$$\begin{array}{r} -12y \quad -12y \\ 60 = y + 2 \end{array}$$

$$\frac{58}{1} = \frac{y}{1}$$

$$3. -2(5 + 4m) + 16 = -90$$

$$-10 - 12m + 16 = -90$$

$$-12m + 6 = -90$$

$$\begin{array}{r} -6 \quad -6 \\ -12m = -96 \end{array}$$

$$\frac{-12m}{-12} = \frac{-96}{-12}$$

$$m = 8$$

$$4. 8(4u-1) - 12u = 11(2u-6)$$

$$32u - 8 - 12u = 22u - 66$$

$$20u - 8 = 22u - 66$$

$$\begin{array}{r} -20u \quad -20u \\ -8 = 2u - 66 \end{array}$$

$$-8 = 2u - 66$$

$$\begin{array}{r} +66 \quad +66 \\ 58 = 2u \end{array}$$

$$\frac{58}{2} = \frac{2u}{2}$$

$$29 = u$$

$$5. \left(\frac{17-m}{4} \right) = (-10)4$$

$$17 - m = -40$$

$$\begin{array}{r} -17 \quad -17 \\ -m = -57 \end{array}$$

$$\frac{-m}{-1} = \frac{-57}{-1}$$

$$m = 57$$

$$6. 4(2r - 8) = \frac{1}{7}(49r + 70)$$

$$8r - 32 = 7r + 10$$

$$\begin{array}{r} -7r \quad -7r \\ r - 32 = 10 \end{array}$$

$$r - 32 = 10$$

$$\begin{array}{r} +32 \quad +32 \\ r = 42 \end{array}$$

$$r = 42$$

$$7. \left(\frac{1}{4} - \frac{2}{3}y = \frac{3}{4} - \frac{1}{3}y \right)$$

$$3 - 8y = 9 - 4y$$

$$\begin{array}{r} +8y \quad +8y \\ 3 = 9 + 4y \end{array}$$

$$\begin{array}{r} 3 \quad = \quad 9 + 4y \\ -9 \quad -9 \\ -6 = 4y \end{array}$$

$$\frac{-6}{4} = \frac{4y}{4}$$

$$\frac{-3}{2} = y$$

$$y = -\frac{3}{2}$$

$$8. 11 - 2(3m - 10) = 5(4 - m)$$

$$11 - 6m + 20 = 20 - 5m$$

$$\begin{array}{r} -6m + 31 = 20 - 5m \\ +6m \quad +6m \\ 31 = 20 + m \end{array}$$

$$31 = 20 + m$$

$$\begin{array}{r} 31 = 20 + m \\ -20 \quad -20 \\ 11 = m \end{array}$$

$$11 = m$$

$$m = 11$$

$$\sqrt{11} \approx 3.3166 \rightarrow 3.3166$$

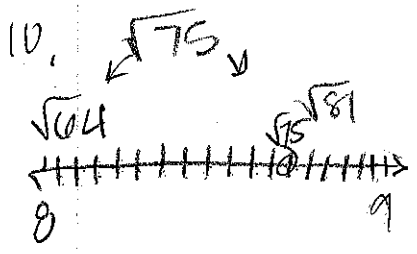
9. $-3, \sqrt{31}, \sqrt{11}, 5.5, -\frac{40}{11}$

order \rightarrow $3 \rightarrow 4$ $\sqrt{10} \approx 3.16$

\downarrow \downarrow \downarrow \downarrow \downarrow

$-3 \approx 5$ ≈ 3.16 5.5 ≈ -3.64

$-3, -\frac{40}{11}, \sqrt{11}, \sqrt{31}, 5.5$ don't stress ab. these 2!



$8 \frac{11}{17} \rightarrow$

$$8 \frac{11}{17} = 8 + \frac{11}{17} = 8 + 0.647 = 8.647$$

≈ 8.65

11. $\sqrt{50} \rightarrow$ irrational

12. $80 \rightarrow$ rational, whole #
integer, natural #

13. $0.\overline{5} + \frac{2}{3}$

$$\frac{5}{9} + \frac{2}{3} = \frac{5}{9} + \frac{4}{6} = \frac{5}{9} + \frac{6}{9} = \frac{11}{9}$$

14. $0.\overline{5} \cdot \frac{2}{3}$

$$\frac{5}{9} \cdot \frac{2}{3} = \frac{10}{27}$$

15. $0.\overline{5} \div \frac{2}{3}$

$$\frac{5}{9} \div \frac{2}{3} = \frac{5}{9} \cdot \frac{3}{2} = \frac{5}{6}$$

16. $x =$ the number

$$11x - 3 = x - 13$$

$$\begin{array}{r} 11x - 3 = x - 13 \\ -x \quad -x \\ \hline 10x - 3 = -13 \\ +3 \quad +3 \\ \hline 10x = -10 \\ 10 \quad 10 \\ \hline x = -1 \end{array}$$

The number is -1.

17. $x =$ the number

$$3x + 1 = 5x - 15$$

$$\begin{array}{r} 3x + 1 = 5x - 15 \\ -3x \quad -3x \\ \hline 1 = 2x - 15 \\ +15 \quad +15 \\ \hline 16 = 2x \\ 2 \quad 2 \\ \hline 8 = x \end{array}$$

The number is 8.

$$\begin{array}{r}
 328 \\
 25 \overline{) 8200} \\
 \underline{-75} \\
 70 \\
 \underline{-50} \\
 200
 \end{array}$$

18. $X =$ price 20 yrs. ago

$$\begin{array}{r}
 .49 = 4X - .03 \\
 +.03 +.03 \\
 \hline
 .52 = 4X \\
 4 4 \\
 \hline
 .13 = X
 \end{array}$$

The price was \$0.13
20 yrs. ago.

19. $X =$ # of posters

$$\begin{array}{r}
 180 + 2.5X = 1000 \\
 -180 -180 \\
 \hline
 2.5X = 820 \\
 2.5 2.5 \\
 \hline
 X = 328
 \end{array}$$

They can print 328
posters.

20. $X =$ 1st #
 $X + 2 =$ 2nd #
 $X + 4 =$ 3rd #

$$\begin{array}{r}
 X + 4(X+4) = 61 \\
 X + 4X + 16 = 61 \\
 5X + 16 = 61 \\
 -16 -16 \\
 \hline
 5X = 45 \\
 X = 9
 \end{array}$$

The numbers are
9, 11, and 13.