

3.  $(1, 1)$

4.  $(5, 6)$

5.  $(-9, -11)$

6.  $(19, 16)$

7.  $(2, 1)$

10.  $(-17, 5)$

11.  $(5, 6)$

12.  $(-6, 10)$

13.  $(4, 4)$

## Word Problem Day!

Today we will go over the even problems for notes and your homework will be the odd problems:)

What kind of monkey can fly?

2. The difference between two numbers is 16. Five times the smaller is the same as 8 less than twice the larger. Find the numbers.

$$\begin{array}{l}
 \begin{array}{l}
 \text{big} \quad \text{smaller} \\
 \underline{\underline{X - Y = 16}}
 \end{array}
 \qquad
 \begin{array}{r}
 5y = 2x - 8 \\
 -2x \quad -2x \\
 \hline
 \end{array} \\
 \\
 \begin{array}{r}
 -2x + 5y = -8 \\
 \text{(2)} \quad \underline{\underline{X - Y = 16}} \quad \text{(2)} \\
 \hline
 -2x + 5y = -8 \\
 2x - 2y = 32 \\
 \hline
 3y = 24 \\
 \underline{\quad} \\
 y = 8
 \end{array} \\
 \\
 \begin{array}{r}
 X - 8 = 16 \\
 + 8 \quad + 8 \\
 \hline
 X = 24
 \end{array} \\
 \\
 \boxed{(24, 8)} \\
 \text{Smaller} = 8 \\
 \text{larger} = 24
 \end{array}$$

4. Two records and three tapes cost \$31. Three records and two tapes cost \$29. Find the cost of each record and each tape.

$$\begin{array}{l} (-3) \quad 2R + 3T = \$31 \\ (2) \quad 3R + 2T = 29 \end{array}$$

$$\begin{array}{r} -6R - 9T = -93 \\ 6R + 4T = 58 \\ \hline -5T = -35 \\ \frac{-5}{-5} \quad \frac{-35}{-5} \end{array}$$

$$T = 7$$

$$\begin{array}{l} \text{Tapes} = \$7 \\ \text{Records} = \$5 \end{array}$$

$$\begin{array}{r} 2R + 3(7) = 31 \\ 2R + 21 = 31 \\ \hline -21 \quad -21 \\ \hline 2R = 10 \\ \frac{2}{2} \quad \frac{10}{2} \\ R = 5 \end{array}$$

6. A group of students go out for lunch. If two have hamburgers and five have hot dogs, the bill will be \$8.00. If five have hamburgers and two have hot dogs, the bill will be \$9.50. What is the price of a hamburger?

$x$  = hamburgers  
 $y$  = hot dogs

$$(-2) \quad 2x + 5y = 8.00$$

$$(5) \quad 5x + 2y = 9.50$$

$$-4x - 10y = -16.00$$

$$25x + 10y = 47.50$$

$$\frac{21x}{21} = \frac{31.50}{21}$$

$$x = \$1.50 \text{ hamburger}$$

8. A shipment of TV sets, some weighing 30 kg each and the others weighing 50 kg each, has a total weight of 880 kg. If there are 20 TV sets all together, how many weigh 50 kg?

$$x = 30 \text{ Kg}$$

$$\boxed{y = 50 \text{ Kg}}$$

$$30x + 50y = 880$$

$$(-30) \quad x + y = 20 \quad (-30) \quad \leftarrow$$

$$\begin{array}{r} 30x + 50y = 880 \\ -30x - 30y = -600 \\ \hline \end{array}$$

$$\frac{20y}{20} = \frac{280}{20}$$

$$\boxed{y = 14 \text{ TV's weighing } 50 \text{ Kg}}$$

2. Ms. Lynch has 21 coins in nickels and dimes. Their total value is \$1.65. How many of each coin does she have?

$$\begin{aligned} (-.05) \quad n + d &= 21 (-.05) \\ .05n + .10d &= 1.65 \end{aligned}$$

$$\begin{array}{r} \phantom{-} .05n + \phantom{-} .10d = 1.65 \\ \phantom{-} .05n + \phantom{-} .05d = -1.05 \\ \hline \phantom{-} .05d = .60 \end{array}$$

$$\frac{.05d}{.05} = \frac{.60}{.05}$$

$$\begin{array}{l} d = 12 \text{ dimes} \\ n = 9 \text{ nickels} \end{array}$$

$$\begin{array}{r} n + d = 21 \\ n + 12 = 21 \\ \phantom{n} - 12 \phantom{=} -12 \\ \hline n = 9 \end{array}$$

4. The total value of the \$1 bills and \$5 bills in a cash box is \$124. There are 8 more \$5 bills than \$1 bills. How many of each are there?

$$x = \$1$$

$$y = \$5$$

$$1x + 5y = 124$$

$$\boxed{x + 8} = \boxed{y} \quad \leftarrow \text{substitution}$$

$$x + 5(x + 8) = 124$$

$$x + 5x + 40 = 124$$

$$6x + 40 = 124$$

$$\begin{array}{r} -40 \quad -40 \\ \hline \end{array}$$

$$\frac{6x}{6} = \frac{84}{6}$$

$$x = 14 \text{ one dollar bills}$$

$$y = x + 8 = \underline{14} + 8 = \underline{22} \text{ five dollar bills}$$



6. Joe Lick bought some 20-cent and 25-cent stamps. He bought 32 stamps in all, and paid \$7.40 for them. How many stamps of each kind did he buy?

$$x = 20¢ \text{ Stamps}$$

$$y = 25¢ \text{ Stamps}$$

$$\begin{array}{r} (-.20) \quad x + y = 32 \quad (-.20) \quad \leftarrow \\ \underline{.20x + .25y = 7.40} \end{array}$$

$$\begin{array}{r} -.20x - .20y = -6.40 \\ \underline{.20x + .25y = 7.40} \\ \hline .05y = 1.00 \\ \underline{.05} \quad \underline{.05} \end{array}$$

$$y = 20 \rightarrow 25¢ \text{ stamps}$$

$$\begin{array}{r} x + y = 32 \\ x + 20 = 32 \\ \underline{-20 \quad -20} \end{array}$$

$$x = 12 \rightarrow 20¢ \text{ stamps}$$

8. Romeo bought a mixture of 20-cent, 35-cent, and 50-cent valentines. The number of 20-cent valentines was 1 more than twice the number of 35-cent valentines, and the number of 50-cent valentines was 2 less than the number of 35-cent ones. If he spent \$4.20 all together, how many valentines of each kind did he buy?

$$\rightarrow x = 20¢$$

$$\rightarrow y = 35¢$$

$$z = 50¢$$

$$\begin{array}{|l} x \\ z \end{array} = \begin{array}{|l} 2y + 1 \\ y - 2 \end{array} \quad \begin{array}{l} \leftarrow \\ \rightarrow \end{array} \quad \begin{array}{l} x = 2(4) + 1 = 8 + 1 = 9 \\ z = 4 - 2 = 2 \end{array}$$

$$.20x + .35y + .50z = 4.20$$

$$.20(2y + 1) + .35y + .50(y - 2) = 4.20$$

$$\underline{.4y} + \underline{.2} + \underline{.35y} + \underline{.5y} - \underline{1} = 4.20$$

$$\begin{array}{r} 1.25y - .8 = 4.20 \\ \quad \quad \quad + .8 \quad \quad \quad + .8 \\ \hline \end{array}$$

$$\begin{array}{r} 1.25y = 5.00 \\ \hline 1.25 \quad 1.25 \end{array}$$

$$y = 4 \quad (35¢ \text{ val})$$

$$x = 9 \quad (20¢ \text{ val})$$

$$z = 2 \quad (50¢ \text{ val})$$

Homework: Complete the odd problems on both "What kind of Monkey can fly?" and "How did the doe win the bid animal race?"