

HW: Word Problems HW/2-5, 13

Warm up:

One number is 5 more than twice another. Their sum is 56. Find the numbers.

$$y = 2x + 5$$

$$x + y = 56$$

$$x + 2x + 5 = 56$$

$$3x + 5 = 56$$

$$\begin{array}{r} 3x + 5 = 56 \\ -5 \quad -5 \\ \hline 3x = 51 \\ \frac{3x}{3} = \frac{51}{3} \end{array} \quad x = 17$$

$$2(17) + 5$$

$$34 + 5$$

$$39$$

17 and 39

Andy has \$3 less than 6 times as much money as Will. Together they have \$235. How much money does each person have?

$$a = 6w - 3$$

$$a + w = 235$$

$$6w - 3 + w = 235$$

$$7w - 3 = 235$$

$$\begin{array}{r} 7w - 3 = 235 \\ + 3 \quad + 3 \\ \hline 7w = 238 \end{array} \quad w = 34$$

Will has \$34
Andy has \$201

$$\begin{array}{r} a + 34 = 235 \\ - 34 \quad - 34 \\ \hline a = 201 \end{array}$$

The admission fee at a small fair is \$1.50 for children and \$4.00 for adults. On a certain day, 2200 people enter the fair and \$5050 is collected. How many children and how many adults attended?

$a = \#$ of adults
 $c = \#$ of children

$$1.50c + 4.00a = 5050$$

$$4(c + a) = (2200) \quad \leftarrow$$

1500 children
 700 adults

$$\begin{array}{r} 1.5c + 4a = 5050 \\ - (4c + 4a = 8800) \\ \hline \end{array}$$

$$-2.5c = -3750$$

$$\begin{array}{r} -2.5 \\ \hline \end{array}$$

$$c = 1500$$

$$\begin{array}{r} 1500 + a = 2200 \\ -1500 \quad -1500 \\ \hline a = 700 \end{array}$$

1) The sum of two number is 19. Their difference is 5. What are the numbers?

2) 3 keyboards and 5 speaker sets cost \$216. 6 keyboards and a speaker set costs \$162. How much does each item cost?

3) Mark has \$12 more than twice as much as Barry. Together they have \$231. How much money does each person have?

4) A landscaping company placed two orders with a nursery. The first order was for 13 bushes and 4 trees, and totaled \$487. The second order was for 6 bushes and 2 trees, and totaled \$232. The bills do not list the per-item price. What were the costs of one bush and of one tree?

5) Brenda's school is selling tickets to a spring musical. On the first day of ticket sales the school sold 3 senior citizen tickets and 9 child tickets for a total of \$75. The school took in \$67 on the second day by selling 8 senior citizen tickets and 5 child tickets. What is the price each of each type of ticket?

1) The sum of two number is 19. Their difference is 5. What are the numbers?

$$\begin{array}{r} x + y = 19 \\ + (x - y = 5) \\ \hline 2x = 24 \\ \hline x = 12 \end{array}$$

$$\begin{array}{r} 12 + y = 19 \\ -12 \quad -12 \\ \hline y = 7 \end{array}$$

7 and 12

2) 3 keyboards and 5 speaker sets cost \$216. 6 keyboards and a speaker set costs \$162. How much does each item cost?

$$2 \quad (3k + 5s) = (216) \quad 2$$

$$6k + s = 162$$

speakers \rightarrow \$30
keyboards \rightarrow \$22

$$\begin{array}{r} 6k + 10s = 324 \\ - (6k + s = 162) \\ \hline \end{array}$$

$$\begin{array}{r} 9s = 270 \\ \hline 9 \quad 9 \\ \hline s = 30 \end{array}$$

$$\begin{array}{r} 6k + 30 = 162 \\ - 30 \quad - 30 \\ \hline 6k = 132 \\ \hline 6 \quad 6 \\ \hline k = 22 \end{array}$$

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