Hilda owns her own landscaping company. She mows commercial and residential lawns and mows the lawns every week, which is a total of 120 lawns. She charges $40 for commercial and $20 for residential accounts. Every week, she takes in $2620 in revenue. How many accounts of each type does she manage?

$C =$ Commercial account

$R =$ Residential accounts

$$C + R = 120$$

$$40C + 20R = 2620$$

$$-40C - 40R = 4800$$

$$-20R = -2180$$

$$R = 109$$

$$C + 109 = 120$$

$$C = 11$$

109 Residential Account

11 Commercial Account

Radio Tower had a special on rechargeable batteries. It sold AA for $1 and AAA for $0.75. It sold 42 batteries on a single day and received $37. How many batteries and of which type were sold?

$x = AA$ batteries
$y = AAA$ batteries

$$x + y = 42$$
$$.75y + 1x = 37$$

$$
\left.
\begin{array}{l}
1x + .75y = 37 \\
-1x - y = -42
\end{array}
\right\}
$$

$$-.25y = -5$$
$$y = 20$$

$$x + 20 = 42$$
$$x = 22$$

22 AA batteries
20 AAA batteries

A youth group and their leaders visited Mammoth Cave. Two adults and 5 students in one van paid $77 for the Grand Avenue Tour of the cave. Two adults and 7 students in a second van paid $95 for the same tour. Find the adult price and the student price of the tour.

$a = $ adult price
$s = $ student price

$2a + 5s = 77$

$2a + 7s = 95$

$2a + 5s = 77$
$-2a - 7s = -95$
_____
$-2s = -18$
$s = 9$

$2a + 5(9) = 77$
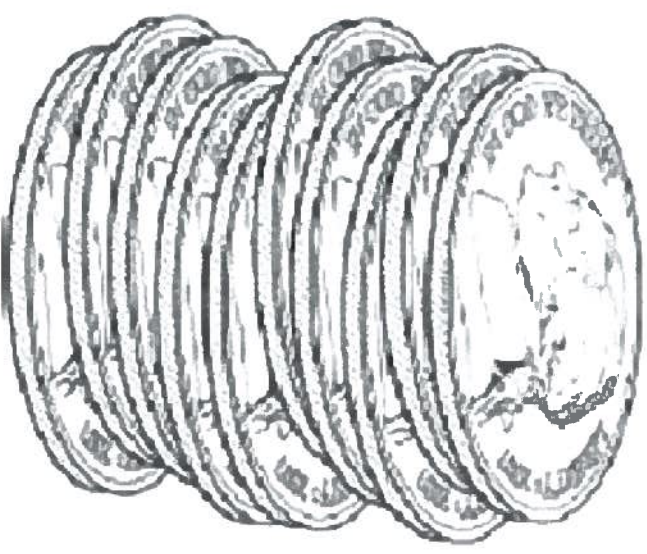$2a + 45 = 77$
$2a = 32$
$a = 16$

adult price $= \$16$
student price $= \$9$

Zoe has a total of 16 coins. Some of her coins are dimes and some are nickels. The combined value of her nickels and dimes is $1.35. How many nickels and dimes does she have?

$d =$ dime
$n =$ nickels

$d + n = 16$
$.10d + .05n = 1.35$

$-10(d + n = 16)$

$$
\begin{array}{r}
10d + 5n = 135 \\
-10d - 10n = -160 \\
\hline
-5n = -25 \\
n = 5
\end{array}
$$

$d + 5 = 16$
$d = 11$

11 dimes
5 nickels

A restaurant charged one customer $28.20 for 3 small dishes and 5 large dishes and charged another customer $23.30 for 4 small dishes and 3 large dishes.

What will 2 small and 4 large dishes cost?

$s$ = small dishes
$l$ = large dishes

$-3(3s + 5l = 28.20)$
$5(4s + 3l = 23.30)$

$-9s - 15l = -84.60$
$20s + 15l = 116.50$
———————
$11s = 31.90$
$s = 2.90$

$3(2.90) + 5l = 28.20$
$8.7 + 5l = 28.20$
$5l = 19.5$
$l = 3.90$

$2(2.90) + 4(3.90) =$
$5.80 + 15.60 =$
$\boxed{\$21.40}$

Your teacher wants to see if you can guess your two quiz grades. She tells you that the second quiz grade is 21 points higher than the first quiz grade. She also tells you that twice the first quiz grade is 57 points more than the second quiz grade. What were your two quiz grades?

Quiz

- Quiz -

$x = $ 1st quiz grade (pt)

$y = $ 2nd quiz grade (pt)

$y = x + 21$

$2x = 57 = x + y$

$\left.\begin{array}{l} y = 2x - 57 \\ y = x + 21 \end{array}\right\}$

$$\begin{array}{r} 2x - 57 = x + 21 \\ -x \qquad +57 \quad +57 \\ \hline x = 78 \end{array}$$
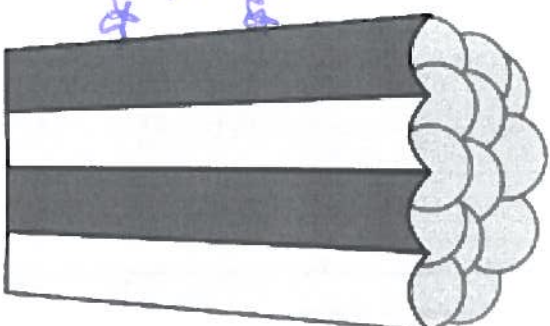
1st quiz = 78 pts.

2nd quiz = 99 pts

## MOVIE THEATER

7) The manager of a movie theater found that Saturday's sales were $3675. He knew that a total of 650 tickets were sold Saturday. Adult tickets cost $7.50, and children's tickets cost $4.50. How many of each kind of ticket were sold?

$a =$ adult tickets

$c =$ children tickets

$$ \# \quad a + c = 650 $$

$$ \$ \quad 7.5a + 4.5c = 3675 $$

$$ a = 650 - c $$

$$ 7.5(650 - c) + 4.5c = 3675 $$

$$ 4875 - 7.5c + 4.5c = 3675 $$

$$ 4875 - 3c = 3675 $$

$$ -3c = -1200 $$

$$ c = 400 $$

$$ a + 400 = 650 $$
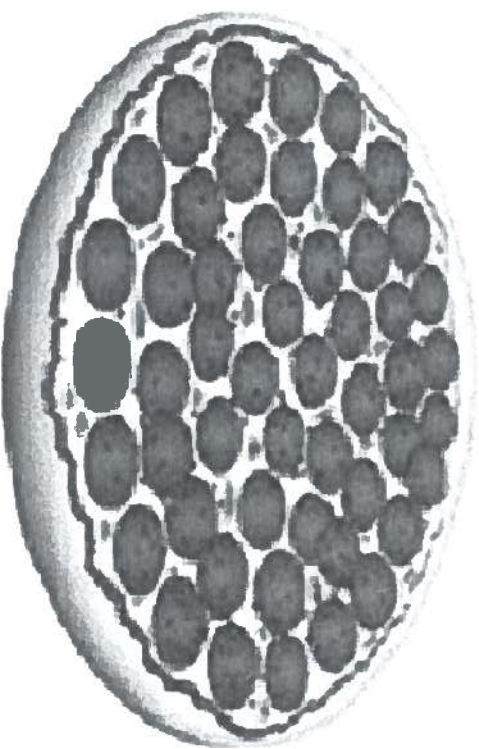
$$ a = 250 $$

250 adult tickets
400 children tickets

Jack and Jill both ordered pizzas from Wayne's Pizza for their parties. Jack paid $58.50 for 3 pepperoni pizzas and 2 plain pizzas. Jill paid $67 for two pepperoni pizzas and 4 plain pizzas. How much does Wayne's Pizza charge for a plain pizza and for a pepperoni pizza?

$P$ = pepperoni $\cancel{\$}$ $\cancel{\$}$
$\ell$ = plain

$3p + 2\ell = 58.50$
$2p + 4\ell = 67.00$

$-2(3p + 2\ell = 58.50)$
$\phantom{-2(}2p + 4\ell = 67.00$
$\underline{-6p - 4\ell = -117.00}$
$\phantom{-}-4p = -50$
$\phantom{-4}p = 12.50$

$3(12.50) + 2\ell = 58.$
$\phantom{3(12.50)+}2\ell = 21$
$\phantom{3(12.50)+}\ell = 10.50$

pepperoni = $12.50
plain = $10.50