~~FAXED~~

M10C - Systems Problem Solving Practice KEY

1. Speed-E-Car $y = 0.10x + 379$ y = cost($)
Easy 4U $y = 0.35x + 249$ x = # km driven

$0.10x + 379 = 0.35x + 249$

$130 = 0.25x$

$\boxed{x = 520 \text{ km}}$

$y = 0.10(520) + 379$

$\boxed{y = \$430.00}$

Both companies will cost $430.00 if Jason drives 520 km.
If Jason drives less than 520 km he should choose Easy 4U, otherwise Speed-E-Car.

2. x = time playing basketball (min)
y = time biking (min)

$(x + y = 90)^{\times 21}$ → $21x + \cancel{21y} = 1890$
$25x + 21y = 2178$ $\quad -\ 25x + \cancel{21y} = 2178$
$-4x = -288$
$\boxed{x = 72}$

$x + y = 90$
$(72) + y = 90$
$\boxed{y = 18}$

So Jin spent 72 min playing Bball and 18 min biking.

3. x = # of bicycles
y = # of tricycles

seats: $x + y = 30$
$x = 30 - y$

wheels: $2x + 3y = 70$
$2(30 - y) + 3y = 70$
$60 - 2y + 3y = 70$
$60 + y = 70$
$\boxed{y = 10}$

$x = 30 - (10)$
$\boxed{x = 20}$

There are 20 bicycles and 10 tricycles.

4. x = price for one bagel ($)
y = price for one juice ($)

$(5x + 3y = 12.50) \times 2$
$3x + 6y = 12.75$

$10x + \cancel{6y} = 25$
$-\ 3x + \cancel{6y} = 12.75$
$7x = 12.25$
$\boxed{x = \$1.75}$

$3x + 6y = 12.75$
$3(1.75) + 6y = 12.75$
$5.25 + 6y = 12.75$
$6y = 7.50$
$\boxed{y = \$1.25}$

One bagel is $1.75 and one juice is $1.25

5. x = # of dogs
y = # of people

attendance
$x + y = 430$
$y = 430 - x$

legs
$4x + 2y = 1210$
$4x + 2(430 - x) = 1210$
$4x + 860 - 2x = 1210$
$2x + 860 = 1210$
$2x = 350$
$\boxed{x = 175}$

$y = 430 - (175)$
$\boxed{y = 255}$

There were 175 dogs.