Warm Up Questions

1. A local farm has 15 animals consisting of cows and chickens. Determine the number of each if there are 40 legs on the farm.

Let x = # of cows

Let y = # of chickens

$x+y=15$

$4x+2y=40$

Solve for x →

(i) $x=-y+15$

(ii) $4x+2y=40$

$4(-y+15)+2y=40$

$-4y+60+2y=40$

$-4y+2y=40-60$

$\frac{-2y}{-2}=\frac{-20}{-2}$

$y=10$

(iii) $x+y=15$

$x+10=15$

$x=15-10$

$x=5$

(iv) 5 cows + 10 chickens

2. The next JMH play is called "The Love of Math". The tickets are $5 for students and $10 for adults. People are so excited that 261 tickets were sold in advance. How many student and adult tickets were sold if the total amount collected was $ 1840.

Let x = # of students

Let y = # of adults

$x + y = 261$

$5x + 10y = 1840$

solve for x

(i) $x = -y + 261$

(ii) $5x + 10y = 1840$

$5(-y + 261) + 10y = 1840$

$-5y + 1305 + 10y = 1840$

$-5y + 10y = 1840 - 1305$

$\frac{5y}{5} = \frac{535}{5}$

$y = 107$

(iii) $x + y = 261$

$x + 107 = 261$

$x = 261 - 107$

$x = 154$

(iv) 154 students and 107 adults

1. **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?**

Let x = # of children

Let y = # of adults

$x + y = 2200$

$1.5x + 4y = 5050$

Solve for x

(i) $x = -y + 2200$

(ii) $1.5x + 4y = 5050$

$1.5(-y + 2200) + 4y = 5050$

$-1.5y + 3300 + 4y = 5050$

$-1.5y + 4y = 5050 - 3300$

$\frac{2.5y}{2.5} = \frac{1750}{2.5}$

$y = 700$

(iii) $x + y = 2200$

$x + 700 = 2200$

$x = 2200 - 700$

$x = 1500$

(iv) 1500 children and 700 adults

2. **Nigel has $6000 to invest. His bank offers an interest rate of 9% on an ABC investment and 11% on the GTA investment. If he makes $572 in interest, how much did he invest in each one?**