Answer on Question #44311 – Math - Algebra

$4x + \frac{6}{y} = 15,$

$6x - \frac{8}{y} = 14$

y is not equal to zero

Find p, if y=px-20

Solution

From the first equation

$4x = 15 - \frac{6}{y}$, divide by 4

$x = \frac{1}{4}\left(15 - \frac{6}{y}\right).$

Plug it into the second equation of the system. Consequently

$\frac{6}{4}\left(15 - \frac{6}{y}\right) - \frac{8}{y} = 14$, multiply by 2,

$3\left(15 - \frac{6}{y}\right) - \frac{16}{y} = 28$

$45 - \frac{18}{y} - \frac{16}{y} = 28$

$-\frac{34}{y} = -17$, divide by (-17),

$\frac{2}{y} = 1,$ therefore, $y = 2$ and $x = \frac{1}{4}\left(15 - \frac{6}{y}\right) = \frac{1}{4}\left(15 - \frac{6}{2}\right) = 3.$

If $y = px - 20,$ then $p = \frac{y+20}{x} = \frac{2+20}{3} = \frac{22}{3}$.