

If Gary gives \$200 to Ricky the ratio of their money will be 1 : 2. If Gary gives \$1000 to Ricky their ratio will be 1 : 14. How much does Gary have?

Suppose, Gary has \$X and Ricky has \$Y.

If Gary gives \$200 to Ricky, Gary has  $X-200$ , Ricky has  $Y+200$ , ratio of their money will be 1 : 2:

$$\frac{X - 200}{Y + 200} = \frac{1}{2}$$

If Gary gives \$1000 to Ricky, Gary has  $X-1000$ , Ricky has  $Y+1000$ , ratio of their money will be 1 : 14:

$$\frac{X - 1000}{Y + 1000} = \frac{1}{14}$$

From first equation:

$$2(X - 200) = Y + 200$$

Or:

$$Y = 2X - 600$$

From second equation:

$$14(X - 1000) = Y + 1000$$

Substitute  $Y = 2X - 600$ :

$$14(X - 1000) = 2X - 600 + 1000$$

Therefore:

$$12X = 1000 - 600 + 14 * 1000 = 14400$$

$$X = \frac{14400}{12} = \$1200$$

Answer: Gary has \$1200.