

$$\frac{\text{marginal utility of apple}}{\text{marginal utility of pear}} = \frac{\text{Price of apple}}{\text{Price of pear}} \quad p = \frac{1}{2}$$

Clair: $\frac{6}{12} = \frac{1}{2}$ \therefore she is optimizing her choice of fruits

Phil: $\frac{6}{6} > \frac{1}{2}$ \therefore Phil is not at the optimum point
He should increase spend on pear

Haley: $\frac{6}{3} > \frac{1}{2}$ \therefore Haley is not at the optimum point
she should increase spending on pear

Alex: $\frac{3}{6} = \frac{1}{2}$ \therefore Alex is optimizing the choice of fruits already

Luke: $\frac{3}{12} < \frac{1}{2}$ \therefore Luke is not at the optimum point
He should decrease spending on pear