

Name: Solutions

### Quiz 4

A, B and C inherit a painting. These are their values for the painting:

$$a = \$240 \quad b = \$60 \quad c = \$300$$

This entire quiz is about finding an arrangement that is fair, equitable and Pareto-optimal.

1. Who will get the painting? C

2. What fraction of their value will each player get?  $q = \frac{w}{s} = \frac{300}{600} = \frac{1}{2}$

3. Find the payouts, and fill in the blanks below:

$$x_A = \frac{1}{2}(240) \\ = 120$$

$$x_B = \frac{1}{2}(60) \\ = 30$$

$$x_C = \frac{1}{2}(300) \\ = 150$$

$$x_A = \underline{120} \quad x_B = \underline{30} \quad x_C = \underline{150}$$

4. Does A envy C? Why?

A thinks C gets  $240 - 120 - 30 = 90$ , and  $90 < 120$   
So NO

5. Does B envy A? Why?

Yes,  $120 > 30$ .