

# Math 30210 — Introduction to Operations Research

Quiz 1 – Wednesday September 5, 2007

**NAME:** \_\_\_\_\_

**Instructions:** This is a closed-book quiz. Please do not use any notes.

A caterer has five mixed fruit drinks available to him, and must produce 500 gallons of punch for a party. The host requires that the punch must contain at least 20% orange juice, at least 10% grapefruit juice and at least 5% cranberry juice. The inventory data are as shown below. The caterer wants to obtain the minimum-cost blend that meets these requirements. Formulate this problem as a linear program.

	<b>Orange</b>	<b>Grapefruit</b>	<b>Cranberry</b>	<b>Supply</b>	<b>Cost</b>
<b>Drink 1</b>	40%	40%	0%	200 gal	\$1.5
<b>Drink 2</b>	5%	10%	20%	400 gal	\$.75
<b>Drink 3</b>	100%	0%	0%	100 gal	\$2
<b>Drink 4</b>	0%	100%	0%	50 gal	\$1.75
<b>Drink 5</b>	0%	0%	0%	800 gal	\$.25