1. The strong axiom of revealed preference requires that if a consumer chooses $x$ when he can afford $y$ and chooses $y$ when he can afford $z$, then he will not choose $z$ when he can afford $x$.
2. Rudolf Rational obeys the weak axiom of revealed preferences. His preferences don't change over time. One year he could afford bundle $x$ but bought bundle $y$. If another year he buys bundle $x$, then he can't afford bundle $y$.
3. If a consumer maximizes a utility function subject to a budget constraint and has strictly convex preferences, then his behavior will necessarily satisfy the weak axiom of revealed preference and the strong axiom of revealed preference.
4. Patience was maximizing her utility subject to her budget constraint. Prices changed and Patience was less well off than before. Therefore, at the old prices her new bundle must cost less than her old bundle.
7.1 (0) When prices are $(4 ; 6)$, Goldie chooses the bundle $(6 ; 6)$, and when prices are $(6 ; 3)$, she chooses the bundle (10; 0).
(a) On the graph below, show Goldie's first budget line in red ink and her second budget line in blue ink. Mark her choice from the first budget with the label $A$, and her choice from the second budget with the label $B$.
(b)Is Goldie's behavior consistent with the weak axiom of revealed preference?

## $7.6(0)$ Here is a table that illustrates some observed prices and choices for three different goods at three different prices in three different situations.

| Situation | $p_{1}$ | $p_{2}$ | $p_{3}$ | $x_{1}$ | $x_{2}$ | $x_{3}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| A | 1 | 2 | 8 | 2 | 1 | 3 |
| B | 4 | 1 | 8 | 3 | 4 | 2 |
| C | 3 | 1 | 2 | 2 | 6 | 2 |

Are WARP and SARP satisfied?
7) At prices $\left(p_{1}, p_{2}\right)=(\$ 4, \$ 2)$, Ivan buys the bundle $\left(x_{1}, x_{2}\right)=(8,20)$. At prices $\left(p_{1}^{\prime}, p_{2}^{\prime}\right)=(\$ 2, \$ 4)$, he buys the bundle $\left(x_{1}^{\prime}, x_{2}^{\prime}\right)=(10,13)$. At prices $\left(p_{1}^{\prime \prime}, p_{2}^{\prime \prime}\right)$, he buys the bundle $\left(x_{1}^{\prime \prime}, x_{2}^{\prime \prime}\right)=(14,11)$. What we can tell about $\mathrm{p} 1 "$ and $\mathrm{p} 2 "$ price relation if his preferences satisfy the strong axiom of revealed preferences?
8) A student spends all of her income on pizza and books. When pizzas cost $\$ 3$ each and books cost $\$ 10$ each, she consumed 30 pizzas and 3 books per month. The price of pizzas fell to $\$ 2.90$ each while the price of books rose to $\$ 11$ each. Did the price change make her worse off?

