

Name: \_\_\_\_\_

Date: \_\_\_\_\_

**Quiz 1:****Problem 1:**

Are the following true or false?

Question	True	False
The plant model describes the dynamic relationship between input and output signals	<input type="checkbox"/>	<input type="checkbox"/>
The task of control is to automatically modify disturbance signals in order to achieve desired output signals	<input type="checkbox"/>	<input type="checkbox"/>
Circles in block diagrams represent summations	<input type="checkbox"/>	<input type="checkbox"/>
The direction of action of signals cannot be determined from a block diagram	<input type="checkbox"/>	<input type="checkbox"/>
The integral $y = \int_0^t u(\tau) d\tau$ is a linear operator	<input type="checkbox"/>	<input type="checkbox"/>

**Problem 2:**

The LTI ODE for the RC-circuit is given by

$$u(t) = \frac{y}{R} + C \frac{dy}{dt}$$

Sketch a block diagram for the RC-circuit.