

# Mathematics 122

Quiz #11

Name: Key

*You must show your work to get full credit.*

A hot cup of coffee is left on a desk to cool. If  $t$  is the number of minutes since it was put on the desk and  $T$  is the temperature of the coffee in degrees Fahrenheit, then  $T$  is a function of  $t$ . That is  $T = f(t)$ . 1 pt

(1) Do you expect  $f'(t)$  to be positive or negative (circle one)? Give a reason.

1 pt The cup will be cooling off; that is the temperature is decreasing, so  $f'(t) < 0$ .

(2) If  $f(5) = 120$ ,

1 pt (a) What are the units of 5?

minutes

1 pt (b) What are the units of 120?

$^{\circ}\text{F} = \text{degrees Fahrenheit}$

(3) If  $f'(5) = -7.1$  what are the units of  $-7.1$ ? 1 pt

$\frac{^{\circ}\text{F}}{\text{min.}}$