Quiz # 2 Solutions

Total of 25 points.

1. (a) 3, (b) 4, (c) 2, (d) d.n.e., (e) 3

2. $+\infty$

3.

$$\lim_{t\to 9} \frac{9-t}{3-\sqrt{t}} = \lim_{t\to 9} \frac{9-t}{3-\sqrt{t}} \frac{3+\sqrt{t}}{3+\sqrt{t}} = \lim_{t\to 9} \frac{(9-t)(3+\sqrt{t})}{9-t} = \lim_{t\to 9} 3+\sqrt{t} = 6$$

4. (a) 0, (b) 9

5.

Proof. Given $\epsilon > 0$. Choose $\delta = \epsilon/2$. If

$$0 < |x-(-3)| < \delta = \epsilon/2$$

then

$$|x+3| < \frac{\epsilon}{2}$$

then

$$|2x+6| < \epsilon$$

then

$$|(2x+4)+2| < \epsilon.$$

Thus

$$|(2x+4)-(-2)| < \epsilon.$$

□