quiz 18
math1117.07
u new haven
F11Nov

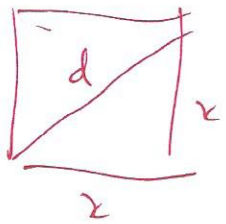
name: Solution

1 (8 points). The sides of a square decrease in length at a rate of 1 m/s.
(a) At what rate is the area of the square changing when the sides are 5m long?
(b) At what rate are the lengths of the diagronals of the square changing when the sides are 5m long?

a) $A = x^2 \Rightarrow A' = 2x \cdot x'$ and $x = 5,\ x' = -1$

so $A' = 2(5)(-1) = -10$

b)



$d^2 = x^2 + x^2 \Rightarrow d = x\sqrt{2}$

$\Rightarrow d' = \sqrt{2}\, x',\ x' = -1$

$\Rightarrow d' = \sqrt{2}(-1) = -\sqrt{2}$