Practice Problems on Sections 10.9 and 11.2 - ANSWERS

1. a) 6 sec; b) $60\sqrt{3}$ m; c) 125 m; d) $20\sqrt{7}$ m/s.

2. a), b), c) DNE (in a) and b) the limits are different along the coordinate axes; in c) the limits along the straight lines are different from the limits along the parabola $y = x^2$;
d) -4; (use multiplication by the conjugate);
e) 1/2; (substitute $t = x^2 - y$);
f) 3 (factor out and cancel out common factor $x - 1$)
g) DNE (the limits along the coordinate axes are different from the limit along the line $y = x$);
h) 0; (use polar coordinates);
i) 0; (use change of coordinates similar to polar coordinates: $x = 2r \cos \theta, y = r \sin \theta$;)