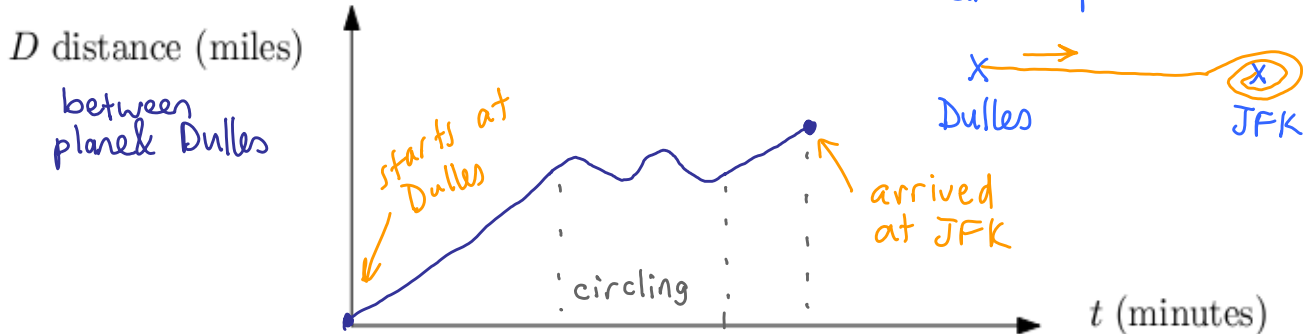
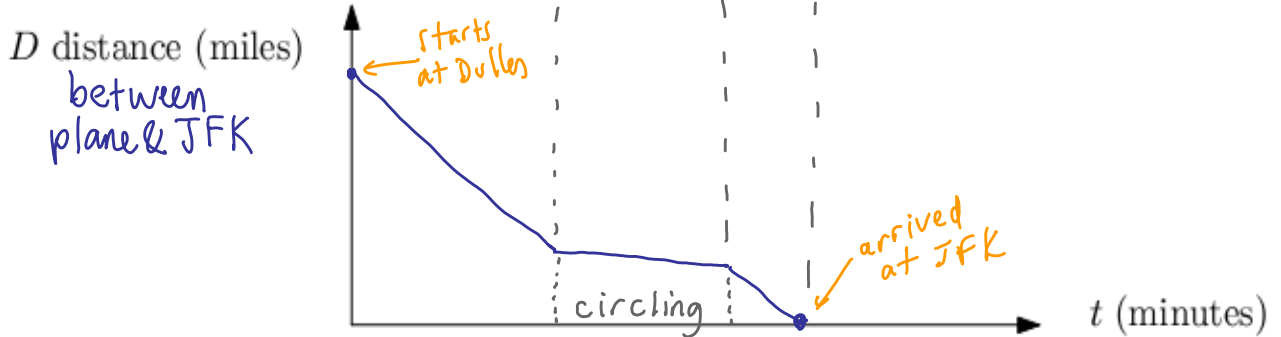


1. A plane is flying from Dulles airport to JFK, but has to circle several times around JFK before landing.

(a) Sketch a possible graph of the distance of the plane to Dulles during its flight.



(b) Sketch a possible graph of the distance of the plane to JFK during its flight.



2. Given $20 - 8x - 5y = 0$, express it as a linear function of x in standard form. Find its vertical and horizontal intercepts.

standard form $\boxed{y = 4 - \frac{8}{5}x}$

vert. intercept: $x=0 \rightarrow y = \underline{4}$

horiz. intercept: $y=0 \rightarrow 8x = 20$
 $x = \frac{5}{2} = \underline{2.5}$

3. A lawn care company charges \$180 for mowing 4 acres of land and charges \$320 for 8 acres of land. Find the linear function for the cost C as a function of the area a .

$C = f(a) = b + m \cdot a$

a	C
4	180
8	320

slope = $m = \frac{\Delta C}{\Delta a} = \frac{320 - 180}{8 - 4} = 35 \text{ \$/acre}$

$C = b + 35a \quad b = ?$

plug in $a = 4$
 $C = 180 \rightarrow 180 = b + 35 \cdot 4$
 $180 = b + 140$
 $40 = b$

$\rightarrow \underline{\underline{C = 40 + 35a}}$