1. Give parametric equations $x(t)$, $y(t)$, $z(t)$ and bounds for $t$ that produce a path from $(3, 0, 1)$ to $(5, 7, 1)$.

$$x(t) = 3 + 2t$$
$$y(t) = 7t$$
$$z(t) = 1$$

for $0 \leq t \leq 1$

2. Give parametric equations $x(t)$, $y(t)$, $z(t)$ and bounds for $t$ that produce a unit circle centered at the origin in the plane $z = 0$ beginning at $(1, 0, 0)$.

$$x(t) = \cos t$$
$$y(t) = \sin t$$
$$z(t) = 0$$

for $0 \leq t \leq 2\pi$
1. Give parametric equations $x(t)$, $y(t)$, $z(t)$, and bounds for $t$ that produce a path from $(-2, 7, 1)$ to $(a, b, c)$.

\[
\begin{align*}
x(t) &= -2 + (a + 2)t \\
y(t) &= 7 + (b - 7)t \\
z(t) &= 1 + (c - 1)t
\end{align*}
\]

for $0 \leq t \leq 1$

2. Give parametric equations $x(t)$, $y(t)$, $z(t)$ and bounds for $t$ that produce an arc of a circle centered at $(0, 0, 3)$ in the plane $z = 3$ of radius $a$ beginning at $(0, a, 3)$ and continuing counterclockwise through $n$ quadrants.

\[
\begin{align*}
x(t) &= a \cos t \\
y(t) &= a \sin t \\
z(t) &= 3
\end{align*}
\]

for $\pi/2 \leq t \leq \pi/2 + n \pi/2$