

1. Let $f(x) = \cos(x)$ and $g(x) = x \cos(x^2)$.

Find anti-derivatives of f and g .

2. Suppose that the acceleration of an object moving along a line is $a(t) = 12t$ meters/second². If the object is at 0 at time $t = 1$ second and has moved 16 meters in the positive direction after 1 second. Find its position for all times.