

FROM THE BOOK: p 387/2, 3, 63

1. Find the area function,  $A(x) = \int_a^x f(t)dt$ , for each of the following functions using the given value of  $a$ , either geometrically or using the limit definition of area.

a.  $f(x) = x + 1$ ,  $a = 2$

b.  $f(x) = 2x - 3$ ,  $a = 0$

c.  $f(x) = x^4 + 2x - 3$ ,  $a = 1$

d.  $f(x) = 3x^2$ ,  $a = a$  (Your area function will depend on both  $a$  and  $x$ .)

e. What is the relationship between  $A(x)$  and  $f(x)$  in the problems above?