

1 These problems have to do with the symbol

$$\int_a^b f(x) dx$$

and its most elementary interpretations. For each one, sketch a graph of the area involved, then use your graph to find the numerical value of the integral. This will mostly involve finding the area of some elementary figure (rectangle, trapezoid, triangle, circle, or combination thereof). Or it could involve counting unit squares...

(a)  $\int_0^4 (5) dx$

(h)  $\int_{-2}^3 \left( \frac{x^2 - 16}{x - 4} \right) dx$

(b)  $\int_{-1}^5 |x| dx$

(i)  $\int_{-2}^4 |x - 3| dx$

(c)  $\int_0^3 (6 - 2x) dx$

(j)  $\int_0^4 \sqrt{16 - x^2} dx$

(d)  $\int_{-1}^3 (6 - 2x) dx$

(k)  $\int_{-3}^3 \sqrt{9 - x^2} dx$

(e)  $\int_{-2}^2 (6 - 2x) dx$

(l)  $\int_{-1}^4 (5 - |x|) dx$

(f)  $\int_2^{-2} (6 - 2x) dx$

(m)  $\int_{-70}^3 (x + |x|) dx$

(g)  $\int_0^6 (6 - 2x) dx$

(n)  $\int_3^7 \frac{|x|}{x} dx$