1. Find the area under the graph of $y = 3\sqrt{x}$ between $x = 0$ and $x = 9$.

2. $\displaystyle\int_0^1 \frac{1}{\sqrt{1 - x^2}}\, dx =$
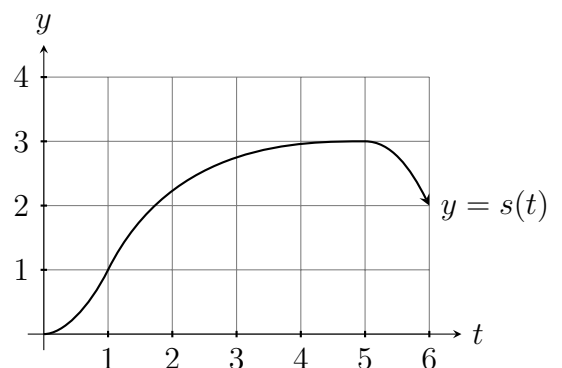
3. $\displaystyle\int_0^2 \left(\frac{x^2}{3} + 2x + 1\right)\, dx =$

4. Find the derivative of the function $F(x) = \displaystyle\int_1^x \frac{t^5 + \sin(\pi t)}{e^t}\, dt$.

5. An object moving on a line has position $s(t)$ and velocity $v(t)$ at time t.
   The position function $s(t)$ is graphed below.

   (a) $\displaystyle\int_5^6 v(t)\, dt =$

   (b) What does your answer to part (a) mean?

1.   Find the derivative of the function $F(x) = \displaystyle\int_1^x \frac{\cos(t) \ln(t^2 + 7)}{t^5 + e^t} \, dt$.

2. $\displaystyle\int_1^4 \frac{1}{\sqrt{x}} \, dx =$
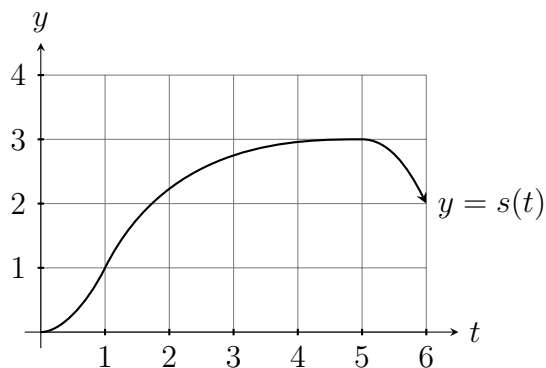
3. $\displaystyle\int_0^1 \frac{1}{1 + x^2} \, dx =$

4.   Find the area under the graph of $y = x^3 + 1$ between $x = 0$ and $x = 2$.

5.   An object moving on a line has position $s(t)$ and velocity $v(t)$ at time t.
     The position function $s(t)$ is graphed below.

     (a) $\displaystyle\int_1^6 v(t) \, dt =$

     (b)   What does your answer to part (a) mean?