

1. The graph of a function f is shown in Figure 1.

8 pts

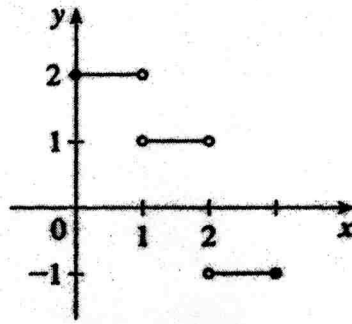


Figure 1: Graph of f

(a) Circle one answer: At $x = 0$, $f(x)$ is

- i. continuous.
- ii. right-continuous.
- iii. left-continuous.
- iv. neither left- nor right-continuous.

(b) Circle one answer: At $x = 1$, $f(x)$ is

- i. continuous.
- ii. right-continuous.
- iii. left-continuous.
- iv. neither left- nor right-continuous.

2. Find the equation of the tangent line to the curve given by $y = 4 \sin^2(x)$ at the point $(\pi/6, 1)$.

8 pts

$$\left. \frac{dy}{dx} \right|_{x = \pi/6} = (8 \sin x \cos x) \Big|_{\pi/6}$$

$$= 8 \cdot \frac{1}{2} \cdot \frac{\sqrt{3}}{2} = \sqrt{3} \cdot 2$$

$$y - 1 = 2\sqrt{3} (x - \pi/6)$$

