

Choose the correct answer in each of the following:

### Section 1.1:

1. The domain of the function  $f(x) = \sqrt{x^2 - 4}$  is

- (a)  $\mathbb{R}$
  - (b)  $\mathbb{R} - \{2\}$
  - (c)  $(-\infty, 2] \cup [2, \infty)$
  - (d)  $[-2, 2]$
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2. The domain of the function  $f(x) = \frac{2x+1}{x^2-36}$  is

- (a)  $\mathbb{R}$
  - (b)  $\mathbb{R} - \{-6, 6\}$
  - (c)  $(-\infty, 6]$
  - (d)  $[6, \infty)$
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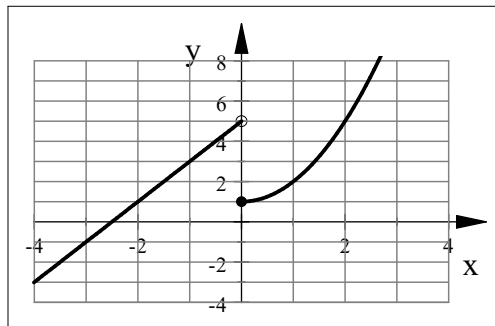
3. The domain of the function  $f(x) = \frac{1}{\sqrt{5-x}}$  is

- (a)  $[-5, \infty)$
  - (b)  $(-\infty, 5)$
  - (c)  $(-\infty, 5]$
  - (d)  $\mathbb{R} - \{5\}$
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4. The graph of the function  $f(x) = x - \sin x$  is symmetric about

- (a) the  $x$ -axis.
  - (b) the  $y$ -axis.
  - (c) the origin.
  - (d) the line  $y = x$ .
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5. The function of the following graph is given by



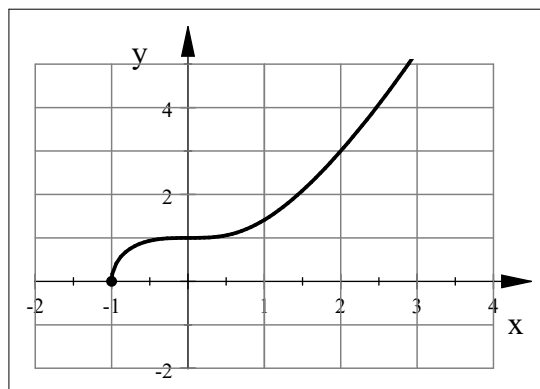
(a)  $f(x) = \begin{cases} x^2 + 1 & \text{if } x \geq 0 \\ 2x + 5 & \text{if } x < 0 \end{cases}$

(b)  $f(x) = \begin{cases} x^2 + 1 & \text{if } x \leq 0 \\ 2x + 5 & \text{if } x > 0 \end{cases}$

(c)  $f(x) = \begin{cases} x^2 + 1 & \text{if } x > 0 \\ 2x + 5 & \text{if } x \leq 0 \end{cases}$

(d)  $f(x) = \begin{cases} x^2 + 1 & \text{if } x < 0 \\ 2x + 5 & \text{if } x \geq 0 \end{cases}$

6. The domain of the function whose graph is given is



(a)  $(0, \infty)$

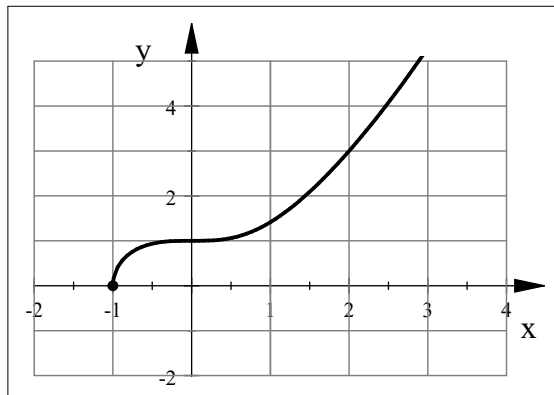
(b)  $[0, \infty)$

(c)  $(-1, \infty)$

(d)  $[-1, \infty)$

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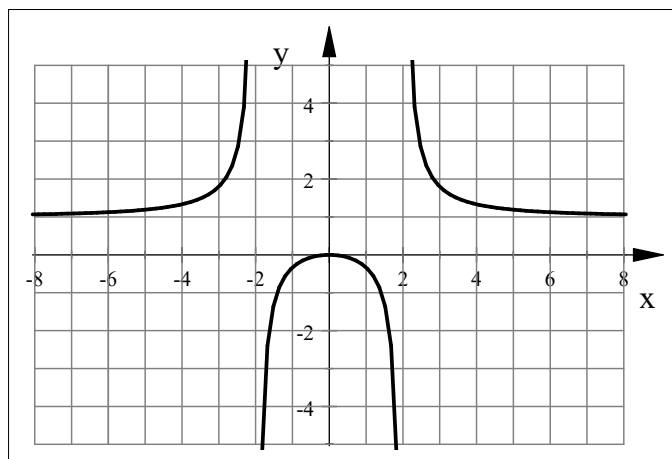
7. The range of the function whose graph is given is



- (a)  $(0, \infty)$
- (b)  $[0, \infty)$
- (c)  $(-1, \infty)$
- (d)  $[-1, \infty)$

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8. The function whose graph is given is



- a) increasing on  $(0, 2) \cup (2, \infty)$ .
- b) increasing on  $(-\infty, -2) \cup (-2, 0)$ .
- c) increasing on  $(-\infty, 0)$
- d) decreasing on  $(0, \infty)$ .

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answers: 1-a, 2-b, 3-b, 4-c, 5-a, 6-d, 7-b, 8-b.

