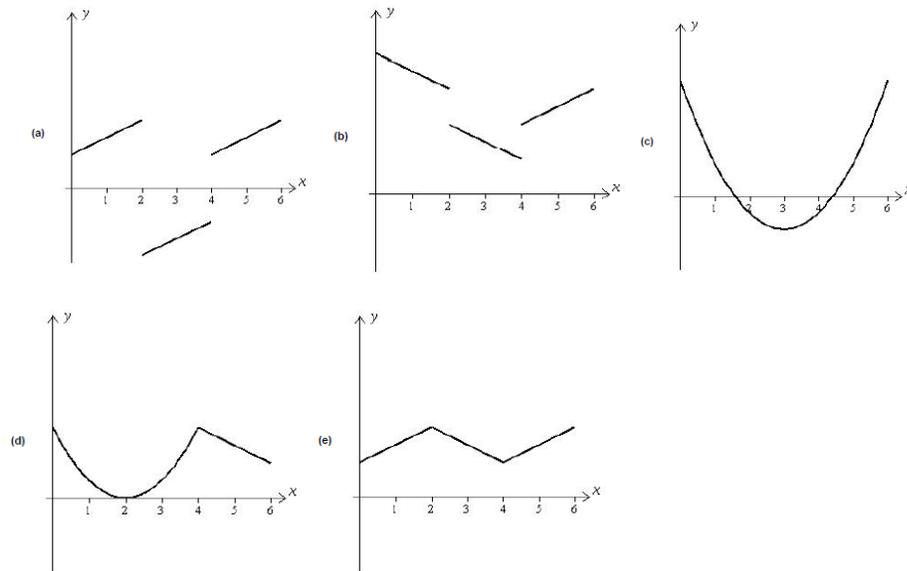


Practice Questions for University of Findlay Placement Test C (Calculus Readiness Skills)

This is only a sampling of the types of questions that a student may see on the placement test.

**Question 1: (1 point)**

A function is increasing on the interval  $[a, b]$  if and only if  $f(x_1) < f(x_2)$  whenever  $x_1 < x_2$  are numbers in  $[a, b]$ . Of the following, which best represents the graph of a function that is increasing on  $[1, 2]$  and  $[4, 5]$ , but not increasing on the interval  $(2, 4)$ ?



**Question 2: (1 point)**

A rectangle has sides of length  $x$  and width  $y$ . The length is doubled and the width is halved. Which equation gives the new perimeter?

(a)  $P = xy$

(b)  $P = 4x + y$

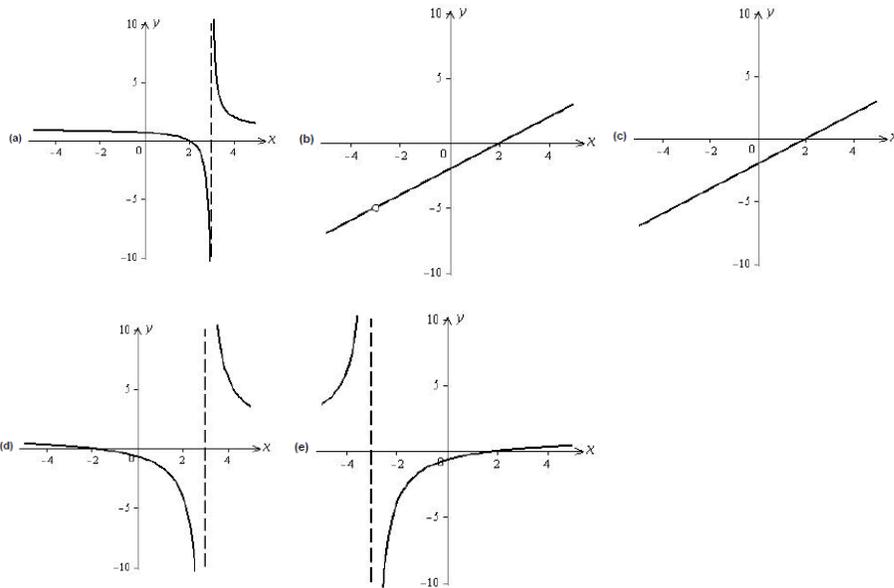
(c)  $P = x^2 + \frac{y}{2}$

(d)  $P = 2x^2 + y$

(e)  $P = 2x + \frac{y}{2}$

Question 3: (1 point)

Of the following, which best represents the graph of  $f(x) = \frac{(x-2)(x+3)}{(x+3)}$ ?



Question 4: (1 point)

If  $F(x-2) = \frac{x+3}{x-4}$ , then  $F(5) =$

- (a)  $\frac{11}{2}$
- (b) 6
- (c) 8
- (d)  $\frac{10}{3}$
- (e)  $-\frac{3}{4}$

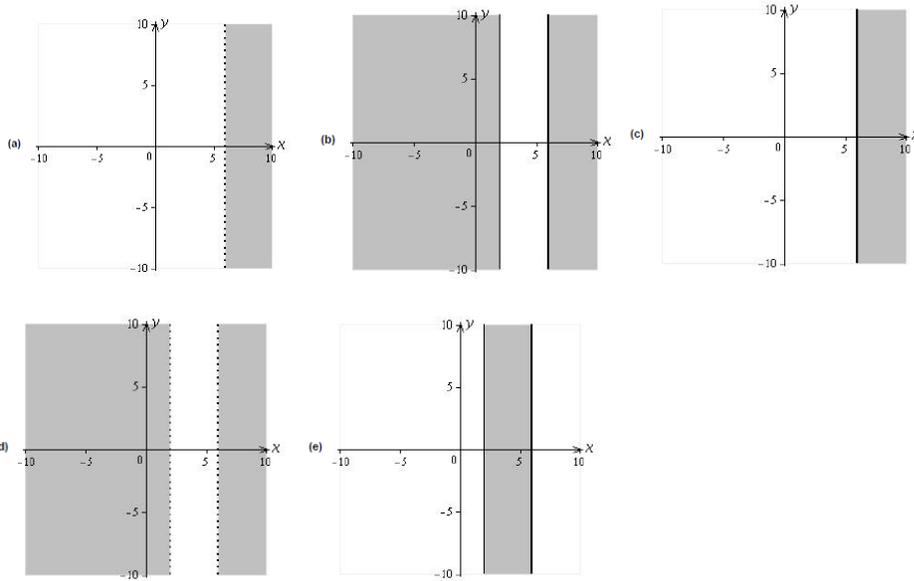
Question 5: (1 point)

Which of the following is the solution to  $\log_2 16 = 8 \cdot 2^{-x}$ ?

- (a)  $-\frac{2}{3}$
- (b) -13
- (c) 1
- (d) -5
- (e)  $-\frac{1}{2}$

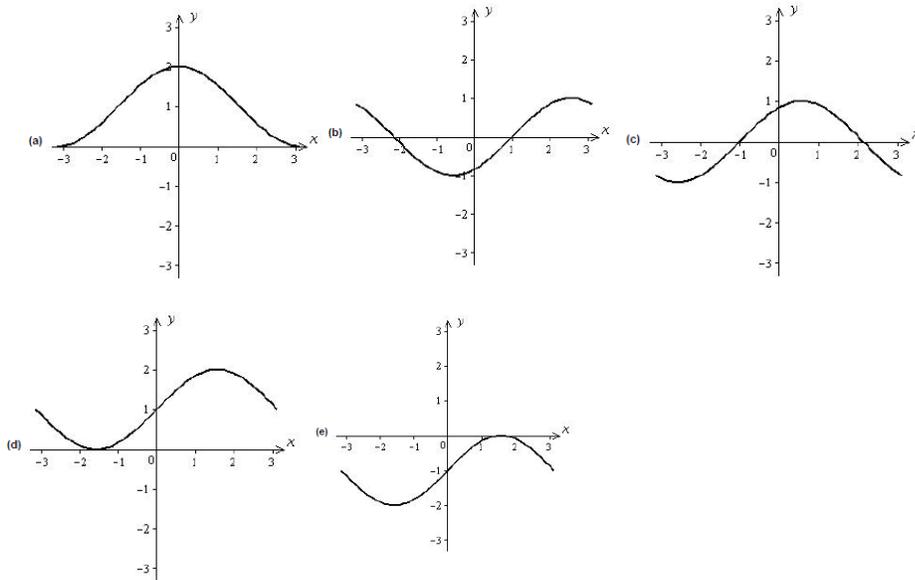
Question 6: (1 point)

Of the following, which best represents the graph of  $|x - 4| \geq 2$ ?



Question 7: (1 point)

Of the following, which best represents the graph of  $f(x) = \sin x + 1$ ,  $-\pi \leq x \leq \pi$ ?



Question 8: (1 point)

A box is  $x$  feet wide. It is twice as long as it is wide and 8 feet high. Which formula gives the volume of the box?

(a)  $V = 16x^2$

(b)  $V = 2x^2 + 8$

(c)  $V = 3x + 8$

(d)  $V = 8x^3$

(e)  $V = 4x^2$

Question 9: (1 point)

Let  $f(n) = \begin{cases} 2n + 1 & \text{if } n \text{ is odd} \\ f(n - 1) & \text{if } n \text{ is even} \end{cases}$  for  $n = 1, 2, 3, \dots$  the value of  $f(5) + f(8)$  is

(a) 30

(b) 26

(c) 28

(d) 18

(e) 27