وزارة التعليم العالي
جامعة الملك سعود
عمادة السنة التحضيرية

King Saud University | Chap.2 | Math 130 (PreCalculus)
Preparatory Year Deanship | Benchmarks
Math Skill Department | Time Allowed: 90 Minutes
First Semester | 1431/1432

ESSAY. Write your answer in the space provided or on a separate sheet of paper.

Determine the domain and range of the function. State whether the function is a function or not a function.

1)

4	12
7	21
10	30
13	39

2)

x	3	7	3	4
y	11	3	14	8

3)

x	-8	-6	6	8
y	9	11	9	11

Determine whether the equation defines y as a function of x.

4) $y = -6x + 4$

5) $4x = 8 - 4y$

6) $y = x^2 + 4$

7) $y = \sqrt{6x - 7}$

8) $x = |9y|$

Find the function value.

9) Let $f(x) = x^2 + 5x + 4$. Find $f(-2)$.

10) Let $f(x) = \frac{x}{3 - x}$. Find $f\left(-\frac{4}{5}\right)$.

11) Let $g(x) = \frac{x - 2}{x + 6}$. Find $g(-10.25)$.

12) Let $g(x) = \frac{x}{\sqrt{4 - x^2}}$. Find g(-2).

13) Let $f(x) = 3x^2 - 4x + 6$. Find f(-x).

14) Let $g(x) = 4x^3$. Find g(2 + h).

15) Let $h(x) = 5x - \sqrt{x^2 - 1}$. Find h(-x).

Find the domain of the function.

16) $f(x) = \frac{x}{x - 5}$

17) $f(x) = \sqrt{8 - x}$

18) $f(x) = \frac{(x + 7)(x - 7)}{x^2 - 49}$

19) $f(x) = \frac{(x + 4)(x - 4)}{x^2 + 16}$

MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.

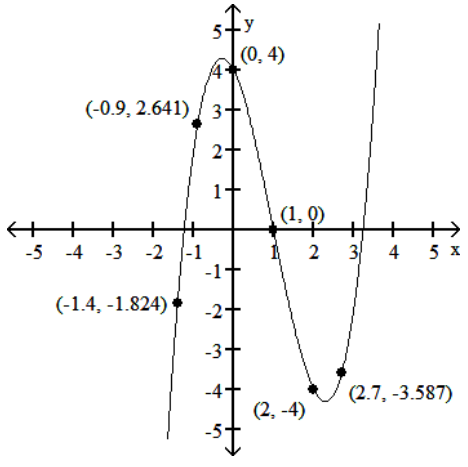
20) $H(x) = \frac{x}{\sqrt{x - 8}}$ 20) _____

A) $(8, \infty)$ B) $(-\infty, \infty)$ C) $(-\infty, 8) \cup (8, \infty)$ D) $[8, \infty)$

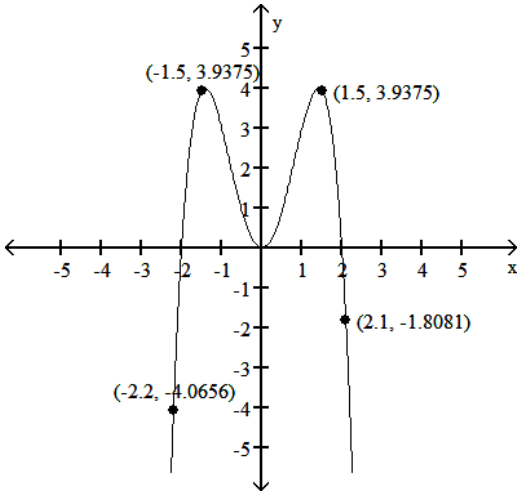
ESSAY. Write your answer in the space provided or on a separate sheet of paper.

The graph of a function is given. Find the indicated function value.

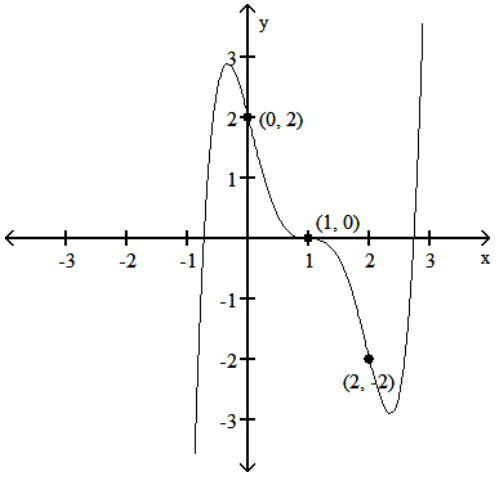
21) f(2.7)



22) g(-1.5)



23) f(0)



Specify the center and radius of the circle.

24) $(x + 7)^2 + (y + 6)^2 = 64$

25) $(x - 9)^2 + (y + 5)^2 = 4$

26) $x^2 + y^2 - 18x - 14y + 66 = 0$

Find the standard form of the equation of a circle that satisfies the given conditions.

27) Center at (1, 0); radius 1

28) Center at (-1, 2); radius $\sqrt{13}$

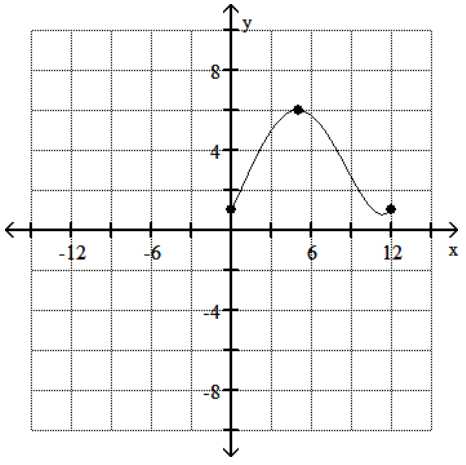
29) Center (21, 13); containing the origin

SHORT ANSWER. Write the word or phrase that best completes each statement or answers the question.

Use the graph of the function to find the following:

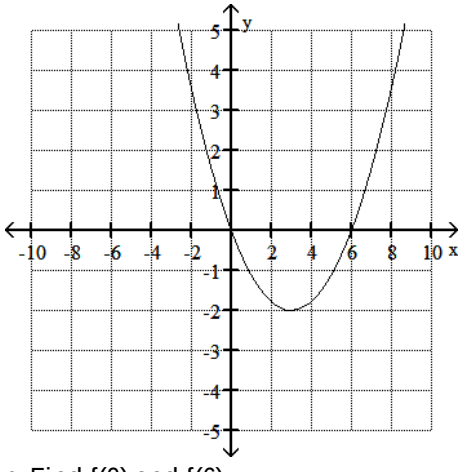
a. the domain and range of the function;
b. the intercepts, if any;
c. the indicated function values; and
d. the value of x given the function value.

30) 30) _____



c. Find f(0), f(1), and f(12).
d. Solve f(x) = 6.

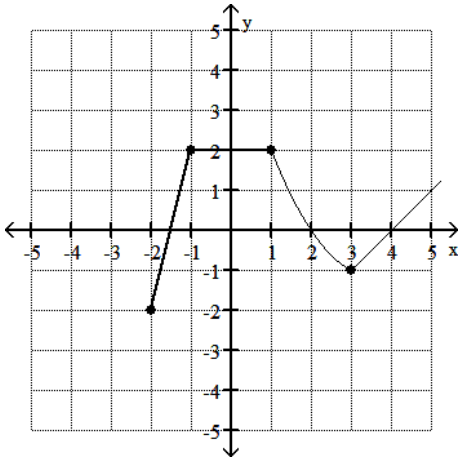
31) 31) _____



c. Find f(0) and f(6).
d. Solve f(x) = -4.

32)

32) _____



c. Find f(-2), f(1), and f(3).

d. Solve f(x) = 2.