

Math 1330

**Homework 1 (1.1& 1.2)**

Problem 1.1.12 refers to problem 12 in Chapter 1, Section 1 of the online text. Record your answers to all of the problems in the EMCF titled “**Homework 1.**”

1. Problem 1.1.12

- A.  $(-\infty, 6) \cup (6, \infty)$                       B.  $(-\infty, -1) \cup (-1, \infty)$   
C.  $(-\infty, -1) \cup (-1, 6) \cup (6, \infty)$       D.  $(-\infty, -1] \cup [-1, \infty)$   
E. None of the above

2. Problem 1.1.22

- A.  $(-\infty, -7)$                                       B.  $[-7, \infty)$   
C.  $(-7, \infty)$                                       D.  $(-\infty, 7]$   
E. None of the above

3. Problem 1.1.50, find  $f(3p)$  and  $f\left(-\frac{7}{4}\right)$

- A.  $f(3p) = \frac{3p^2}{3p+4} - 3p$                       and                       $f\left(-\frac{7}{4}\right) = -\frac{7}{18}$   
B.  $f(3p) = \frac{9p^2}{3p+4} - p$                       and                       $f\left(-\frac{7}{4}\right) = \frac{7}{18}$   
C.  $f(3p) = \frac{12p}{3p+4}$                               and                       $f\left(-\frac{7}{4}\right) = -\frac{28}{9}$   
D.  $f(3p) = -\frac{12p}{3p+4}$                               and                       $f\left(-\frac{7}{4}\right) = -\frac{28}{9}$   
E.  $f(3p) = -\frac{12p}{3p+4}$                               and                       $f\left(-\frac{7}{4}\right) = \frac{28}{9}$

4. Problem 1.1.54, find  $f(-4)$  and  $f(3)$ .

- A. 9 and 15
- B. -23 and 15
- C. -23 and -7
- D. 9 and -7
- E. None of the above

5. Find the difference quotient  $\frac{f(x+h) - f(x)}{h}$  for  $f(x) = -3x + 1$ .

- A. -3
- B.  $-3 + \frac{2}{h}$
- C.  $3 - \frac{1}{h}$
- D.  $-3 - \frac{1}{h}$
- E. None of the above

6. Find the difference quotient  $\frac{f(x+h) - f(x)}{h}$  for  $f(x) = \frac{3-2x}{x}$ .

- A.  $\frac{-4x-3}{x(x+h)}$
- B.  $\frac{3}{x(x+h)}$
- C.  $\frac{4x-3}{x(x+h)}$
- D.  $\frac{-3}{x(x+h)}$

7. Problem 1.2.2

- A. The graph is a function
- B. The graph is not a function

8. Problem 1.2.4

- A. The graph is a function
- B. The graph is not a function

9. Problem 1.2.16 b

- A.  $(-\infty, \infty)$
- B.  $[-2, 1) \cup (1, 7]$
- C.  $[-2, 7]$
- D.  $[-3, 6)$
- E.  $[-3, 6]$

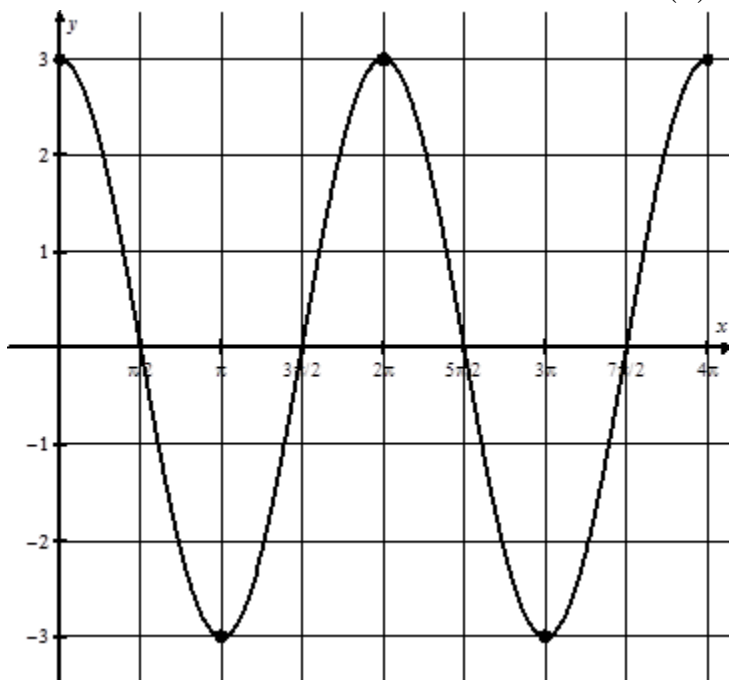
10. Problem 1.2.16 c

- A. There is no y-intercept
- B.  $(0, -2)$
- C.  $(4, 0)$
- D.  $(0, 4)$
- E. None of the above

11. Problem 1.2.16 f

- A. on its domain
- B.  $(-3, 0), (1, 3), (5, 6)$
- C.  $(-2, 0), (1, 3), (5, 6)$
- D.  $(-2, 4.2), (5.8, 6)$
- E. None of the above

For numbers 12 – 15, use the following graph of  $f(x)$ :



12.  $f\left(\frac{3\pi}{2}\right) =$

- A.  $-3$                       B.  $3$                       C.  $\frac{3\pi}{2}$                       D.  $0$

13. What is the domain of  $f(x)$ ?

- A.  $[0, 4]$                       B.  $[0, 4\pi]$                       C.  $[-3, 3]$                       D.  $[0, 3]$

14. What is the range of  $f(x)$ ?

- A.  $[0, 4\pi]$                       B.  $[0, 4]$                       C.  $[-3, 3]$                       D.  $[0, 3]$

15. List all the intercepts of  $f(x)$ .

- A.  $(0, 3), \left(\frac{\pi}{2}, 0\right), \left(\frac{3\pi}{2}, 0\right), \left(\frac{5\pi}{2}, 0\right), \left(\frac{7\pi}{2}, 0\right)$
- B.  $\left(\frac{\pi}{2}, 0\right), \left(\frac{3\pi}{2}, 0\right), \left(\frac{5\pi}{2}, 0\right), \left(\frac{7\pi}{2}, 0\right)$
- C.  $(0, 3), (2\pi, 3), (4\pi, 3), (\pi, -3), (3\pi, -3)$
- D.  $(0, 3)$