

Math 1314 - Practice Exam 1 - Fall 2019

MULTIPLE CHOICE SECTION. (5 pts each) Choose the correct answer for each question. Select one choice only. No work will be graded. No partial credit.

Solve the equation by the square root property.

1) $(3x + 5)^2 = 5$

A) $\left\{ \frac{5 - \sqrt{5}}{3}, \frac{5 + \sqrt{5}}{3} \right\}$

C) $\left\{ -\frac{10}{3}, 0 \right\}$

B) $\left\{ \frac{-5 - \sqrt{5}}{3}, \frac{-5 + \sqrt{5}}{3} \right\}$

D) $\left\{ \frac{\sqrt{5} - 5}{3}, \frac{\sqrt{5} + 5}{3} \right\}$

1) _____

Solve the equation using the quadratic formula.

2) $4x^2 = -6x - 1$

A) $\left\{ \frac{-3 - \sqrt{5}}{8}, \frac{-3 + \sqrt{5}}{8} \right\}$

C) $\left\{ \frac{-6 - \sqrt{5}}{4}, \frac{-6 + \sqrt{5}}{4} \right\}$

B) $\left\{ \frac{-3 - \sqrt{13}}{4}, \frac{-3 + \sqrt{13}}{4} \right\}$

D) $\left\{ \frac{-3 - \sqrt{5}}{4}, \frac{-3 + \sqrt{5}}{4} \right\}$

2) _____

Solve.

3) $4x^2 + 52 = 0$

A) $\pm 13i$

B) 26

C) $\pm \sqrt{13} i$

D) 14

3) _____

Solve the polynomial equation by factoring.

4) $5x^3 + 3x^2 = 80x + 48$

A) $\left\{ -\frac{3}{5}, 0 \right\}$

B) $\{-4, 4\}$

C) $\left\{ -4, -\frac{3}{5}, 4 \right\}$

D) $\left\{ -\frac{3}{5}, 4 \right\}$

4) _____

Solve the radical equation, and check all proposed solutions.

5) $\sqrt{8x + 20} = x$

A) No Solution

B) $\left\{ -\frac{20}{7} \right\}$

C) $\{-2, 10\}$

D) $\{10\}$

5) _____

Solve the equation by making an appropriate substitution.

6) $(3x - 7)^2 - 4(3x - 7) - 12 = 0$

A) $\left\{ \frac{13}{3}, \frac{5}{3} \right\}$

B) $\left\{ \frac{1}{3}, -\frac{9}{3} \right\}$

C) $\left\{ -\frac{13}{3}, -\frac{5}{3} \right\}$

D) $\left\{ -\frac{1}{7}, \frac{9}{3} \right\}$

6) _____

Determine whether the relation is a function.

7) $\{(-3, -8), (3, 6), (5, -5), (7, -6), (10, 6)\}$

A) Not a function

B) Function

7) _____

Evaluate as requested.

8) Given that $f(x) = x^2 - 5x + 1$, find $f(-3)$.

A) 25

B) -5

C) -7

D) 23

8) _____

Evaluate the function and simplify.

9) $f(x) = 3x^2 - 4x + 2$; $f(x - 1)$

A) $3x^2 + 2x + 1$

B) $-10x^2 + 3x + 9$

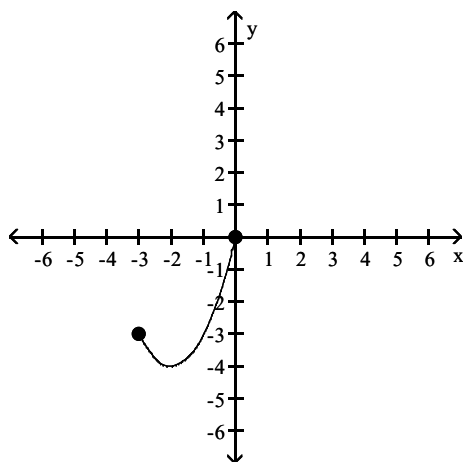
C) $3x^2 - 10x + 1$

D) $3x^2 - 10x + 9$

9) _____

Find the domain and range of the function represented in the graph.

10)



A) Domain: $(-\infty, 0]$; Range: $[0, 3]$

B) Domain: $[-3, 0]$; Range: $[-4, 0]$

C) Domain: $[-4, 0]$; Range: $[-3, 0]$

D) Domain: $[0, 3]$; Range: $(-\infty, 0]$

10) _____

Evaluate the piecewise function at the given value of the independent variable.

11) $f(x) = \begin{cases} x - 5 & \text{if } x > 3 \\ -(x - 5) & \text{if } x \leq 3 \end{cases}$; $f(3)$

A) 3

B) -2

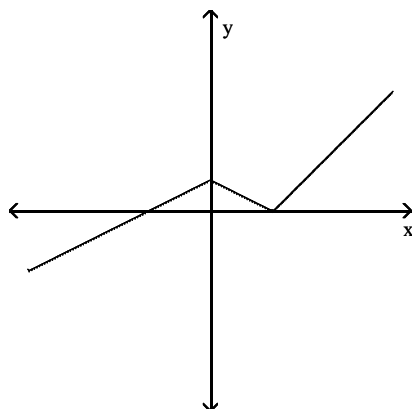
C) 2

D) 15

11) _____

Use the vertical line test to determine whether or not the graph is a graph in which y is a function of x .

12)



A) function

B) not a function

12) _____

SHORT ANSWER SECTION. (5 pts each) WRITE THE ANSWER IN THE BOX. Write the FINAL ANSWER ONLY (do NOT write any work). No work will be graded. No partial credit.

Solve the equation.

13) $x^2 + 9x - 36 = 0$

13) _____

Write ANSWER (Solution Set) ONLY:

Solve the equation.

14) $x^4 - 11x^2 + 18 = 0$

14) _____

Write ANSWER (Solution Set) ONLY:

Evaluate the function and simplify.

15) $g(x) = 4x - 4$; $g(x - 1)$

15) _____

Write ANSWER ONLY:

Determine whether the given function is even, odd, or neither.

16) $f(x) = x^3 - 5x$

16) _____

Write ANSWER ONLY:

ESSAY. (10 pts each) Show all work to justify your answer. Answer with no work or insufficient work will receive no credit. Partial credit may be given.

Solve the polynomial equation by factoring.

17) $3x^4 - 300x^2 = 0$

SHOW ALL WORK:

Solve the equation.

18) $\sqrt{20x - 20} = x + 4$

SHOW ALL WORK:

Answer Key

Testname: 1314-PRACTICETEST1-FALL19

- 1) B
- 2) D
- 3) C
- 4) C
- 5) D
- 6) A
- 7) B
- 8) A
- 9) D
- 10) B
- 11) C
- 12) A
- 13) $\{-12, 3\}$
- 14) $\{-3, 3, -\sqrt{2}, \sqrt{2}\}$
- 15) $4x - 8$
- 16) Odd
- 17) $\{-10, 0, 10\}$
- 18) $\{6\}$