

1. Which of the following is not a solution to the inequality $x^2 - 25 \leq 0$?

A) $x = -6$

B) $x = -5$

C) $x = \frac{5}{2}$

D) $x = -2$

E) $x = 0$

Ans: A

Format: Multiple Choice

Algorithmic: Yes

Difficulty: Medium

Exercise Group: 99-102

Learning Objective: Determine solution points

Section: 0.2

Similar to Exercise: 0.2.99

Type: Skill

2. Solve: $x^2 - 3x - 40 < 0$

A) $(-\infty, -3)$

B) $(-5, \infty)$

C) $(-5, 8)$

D) $(-\infty, 8)$

E) $(8, \infty)$

Ans: C

Format: Multiple Choice

Algorithmic: Yes

Difficulty: Medium

Exercise Group: 107-124

Learning Objective: Solve inequality

Section: 0.2

Similar to Exercise: 0.2.115

Type: Skill

3. Find all intercepts:

$$y = 49x - x^3$$

- A) x -intercept: $(0, 0)$; y -intercepts: $(0, 0)$, $(0, -7)$, $(0, 7)$
- B) x -intercepts: $(-7, 0)$, 7 ; y -intercept: $(0, 0)$
- C) x -intercepts: $(-7, 0)$, $(7, 0)$; no y -intercept
- D) x -intercepts: $(0, 0)$, $(-7, 0)$, $(7, 0)$; y -intercept: $(0, 0)$
- E) x -intercepts: $(0, 0)$, $(-7, 0)$, $(7, 0)$; no y -intercept

Ans: D

Format: Multiple Choice

Algorithmic: Yes

Difficulty: Easy

Exercise Group: 23-32

Learning Objective: Calculate the intercepts of an equation

Section: 0.4

Similar to Exercise: 0.4.29

Type: Skill

4. Use a graphing utility to graph the equations $y = 5$ and $y = x^2 - 4x + 8$. Use the graphs to approximate the values of x that satisfy the inequality $x^2 - 4x + 8 \leq 5$. Round answers to nearest hundredth.

- A) $(-\infty, 3.00]$
- B) $[1.00, 3.00]$
- C) $[1.00, \infty)$
- D) $(-\infty, 1.00] \cup [3.00, \infty)$
- E) $[3.00, \infty)$

Ans: B

Format: Multiple Choice

Algorithmic: Yes

Difficulty: Medium

Exercise Group: 53-64

Learning Objective: Graph Inequality

Section: 0.4

Similar to Exercise: 0.4.55

Type: Skill

5. Find the slope of the line $x + 4y = 28$.

- A) $\frac{1}{4}$
- B) $-\frac{1}{7}$
- C) $-\frac{1}{4}$
- D) $\frac{1}{7}$
- E) $-\frac{1}{28}$

Ans: C

Format: Multiple Choice

Algorithmic: Yes

Difficulty: Medium

Exercise Group: 15-26

Learning Objective: Manipulate a linear equation to determine its slope

Section: 0.5

Similar to Exercise: 0.5.21

Type: Skill

6. Find the y -intercept of the line $x + 2y = 10$.

- A) $(0,2)$
- B) $(0,5)$
- C) $(5,0)$
- D) $(2,0)$
- E) $(0,10)$

Ans: B

Format: Multiple Choice

Algorithmic: Yes

Difficulty: Medium

Exercise Group: 15-26

Learning Objective: Manipulate a linear equation to determine its y -intercept

Section: 0.5

Similar to Exercise: 0.5.22

Type: Skill

7.

$$\left(-\frac{1}{8}, \frac{8}{3}\right) \text{ and } \left(-\frac{3}{16}, \frac{1}{24}\right).$$

Find the slope of the line passing through the points

- A) 21
- B) 42
- C) 63
- D) -42
- E) -21

Ans: B

Format: Multiple Choice

Algorithmic: Yes

Difficulty: Medium

Exercise Group: 27-38

Learning Objective: Calculate the slope of a line passing through two points

Section: 0.5

Similar to Exercise: 0.5.35

Type: Skill