

# Graphing Pre-Test

1.

A line in the  $xy$ -plane passes through the origin and has a slope of  $\frac{1}{8}$ . Which of the following points lies on the line?

- A) (0,8)
- B) (1,8)
- C) (8,8)
- D) (16,2)

2.

In the  $xy$ -plane, the graph of line  $m$  has slope  $-2$ . Line  $n$  is parallel to line  $m$  and goes through point  $(6,0)$ . Which of the following is an equation of line  $n$ ?

- A)  $y = -2x + 12$
- B)  $y = -x + 6$
- C)  $y = -\frac{1}{2}x + 3$
- D)  $y = \frac{1}{2}x - 3$

# Graphing Pre-Test

3.

In the  $xy$ -plane, point  $Z$  is contained in the graph of the solution set of the system of inequalities below. Which option could be the coordinates of point  $Z$ ?

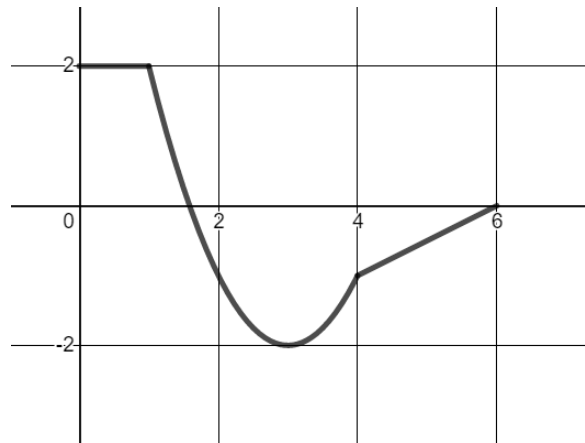
$$y > 3x + 2$$

$$y \leq -x$$

- A)  $(-1, 2)$
- B)  $(-2, 1)$
- C)  $(0, -2)$
- D)  $(2, -2)$

4.

The complete graph of the function  $h$  is shown in the  $xy$ -plane below. For what value of  $x$  is  $h(x)$  at its minimum?



- A) -2
- B) 0
- C) 3
- D) 6

# Graphing Pre-Test

5.

In the  $xy$ -plane, the graph of  $y = (x - 5)^3 + 2$  is an image of the graph of  $y = (x + 3)^3 + 2$  after a translation of how many units to the right?

# Graphing Pre-Test

1. Answer

A line in the  $xy$ -plane passes through the origin and has a slope of  $\frac{1}{8}$ . Which of the following points lies on the line?

- A) (0,8)
- B) (1,8)
- C) (8,8)
- D) (16,2)

Answer: D

Domain: 1 (Algebra)

Skill: c (Linear Equations in Two Variables)

Difficulty: 2 (Blue Square / Intermediate)

Strategy: 5 (Draw a diagram or table)

2. Answer

In the  $xy$ -plane, the graph of line  $m$  has slope  $-2$ . Line  $n$  is parallel to line  $m$  and goes through point  $(6,0)$ . Which of the following is an equation of line  $n$ ?

- A)  $y = -2x + 12$
- B)  $y = -x + 6$
- C)  $y = -\frac{1}{2}x + 3$
- D)  $y = \frac{1}{2}x - 3$

Answer: A

Domain: 1 (Algebra)

Skill: c (Linear Equations in Two Variables)

Difficulty: 2 (Blue Square / Intermediate)

Strategy: 2 (Desmos)

# Graphing Pre-Test

## 3. Answer

In the  $xy$ -plane, point  $Z$  is contained in the graph of the solution set of the system of inequalities below. Which option could be the coordinates of point  $Z$ ?

$$y > 3x + 2$$

$$y \leq -x$$

- A)  $(-1, 2)$
- B)  $(-2, 1)$
- C)  $(0, -2)$
- D)  $(2, -2)$

Answer: B

Domain: 1 (Algebra)

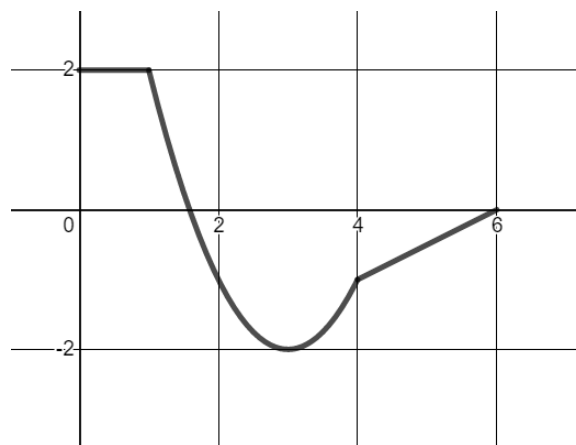
Skill: e (Linear inequalities in one or two variables)

Difficulty: 2 (Blue Square / Intermediate)

Strategy: 2 (Desmos)

## 4. Answer

The complete graph of the function  $h$  is shown in the  $xy$ -plane below. For what value of  $x$  is  $h(x)$  at its minimum?



- A) -2
- B) 0
- C) 3
- D) 6

Answer: C

Domain: 2 (Advanced Math)

Skill: a (Nonlinear functions)

Difficulty: 1 (Green Circle / Easy)

Strategy: 1 (Pencil and handheld calculator only)

# Graphing Pre-Test

5. Answer

In the  $xy$ -plane, the graph of  $y = (x - 5)^3 + 2$  is an image of the graph of  $y = (x + 3)^3 + 2$  after a translation of how many units to the right?

Answer: 8

Domain: 2 (Advanced Math)

Skill: a (Nonlinear Functions)

Difficulty: 2 (Blue Square / Intermediate)

Strategy: 6 (Find a shortcut)