

Station

1

Factor

$$\textcircled{1} \quad 5x^3y^2 + 15xy^3 - 10xy$$

$$\textcircled{2} \quad -12ab^2 - 10b^2 + 18ab$$

$$\textcircled{3} \quad 5x^3y^4z - 8x^2y^4 + 6xz$$

$$\textcircled{4} \quad 48x^5y^4 + 16x^2y^2 + 12x^4$$

$$\textcircled{5} \quad 150ab + 250a^3 - 400a^2b^2c$$

$$\textcircled{6} \quad 4x^3 - 24x^5 - 16x^{12} + 30x^6$$

Station 2

Find the zeroes of the quadratic
by factoring by grouping (AC method)

$$\textcircled{1} \quad 4x^2 + 17x - 15 = y$$

$$\textcircled{2} \quad y = 4x^2 + 7x + 3$$

$$\textcircled{3} \quad y = 12x^2 - 7x + 1$$

$$\textcircled{4} \quad y = 2x^2 + 9x + 7$$

$$\textcircled{5} \quad y = 8x^2 + 65x + 8$$

$$\textcircled{6} \quad y = 2x^2 + 13x - 24$$

Station 3

Find the minimum point of $f(x)$
by using $\left(-\frac{b}{2a}, f\left(-\frac{b}{2a}\right)\right) = \frac{\text{opp}(b)}{2(a)}$

$$\textcircled{1} f(x) = 2x^2 + x - 6$$

$$\textcircled{2} f(x) = 5x^2 - 7x + 2$$

$$\textcircled{3} f(x) = 3x^2 - 7x - 6$$

$$\textcircled{4} f(x) = 6x^2 - 11x + 4$$

$$\textcircled{5} f(x) = 2x^2 - x - 21$$

$$\textcircled{6} f(x) = 4x^2 - 11x - 3$$

Station 4

1

You are trying to dunk a basketball. You need to jump 2.5 feet in the air to dunk the ball. The height that your feet are above the ground is given by the function $h = -16t^2 + 12t$. What is the maximum height your feet will be above the ground?

- A. 28 ft.
- B. 4 ft.
- C. 2.25 ft.
- D. 0.37 ft.

2

The total profit made by a company is given by the function $p = x^2 - 25x + 5,000$. What is the approximate minimum profit made by the company?

- A. \$5,000
- B. \$4,975
- C. \$4,974
- D. \$4,844

3

Brandon found that his sales at his snow cone stand can be modeled by the equation $T = -m^2 + 12m + 3564$ where T is this total sales in hundreds and m is the month. What is the largest amount of money Brandon makes in a month?

- A. \$360
- B. \$600
- C. \$3,600
- D. \$6,000

4

The height h in feet of a certain rocket t seconds after its launch is given by the formula $h = -16t^2 + 2,320t + 125$. Use a graph to determine about how many seconds it will take for the rocket to reach its maximum height of 84,225 feet.

- A. 1 second
- B. 36.25 seconds
- C. 7.25 seconds
- D. 72.5 seconds

5

You are hiking in the mountains. You want to climb to a ledge that is 20 feet above you. The height your hook can be thrown is given by the function $h = -16t^2 - 32t + 5$. What is the maximum height the hook can reach?

- A. 21 ft.
- B. 5 ft.
- C. -1 ft.
- D. -43 ft.

6

The equation $h = -16t^2 + 58t + 3$ models the height of a baseball t seconds after it has been hit. How long will it approximately take for the ball to hit the ground?

- A. -0.5 seconds
- B. 1.8 seconds
- C. 3 seconds
- D. 3.68 seconds