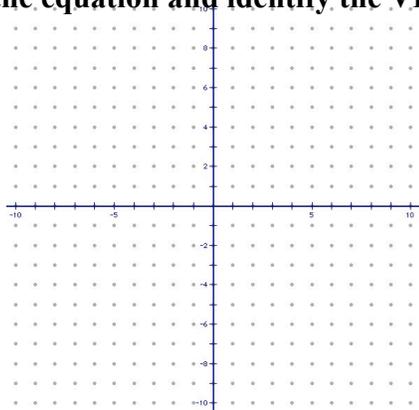
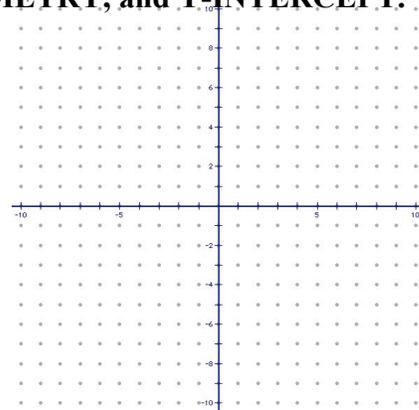


**Level 1: Graph the equation and identify the VERTEX, AXIS of SYMMETRY, and Y-INTERCEPT.**

1.  $y = x^2 - 4x + 5$

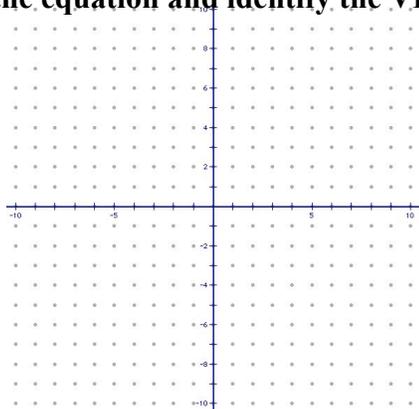


2.  $y = (x + 3)^2 - 7$

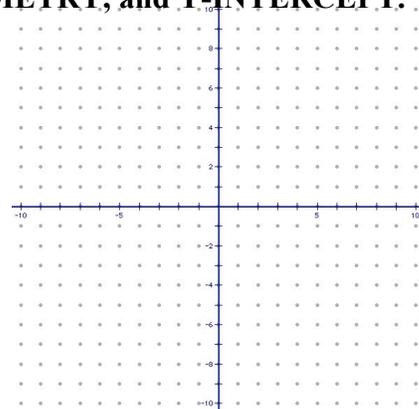


**Level 1: Graph the equation and identify the VERTEX, AXIS of SYMMETRY, and Y-INTERCEPT.**

1.  $y = x^2 - 4x + 5$

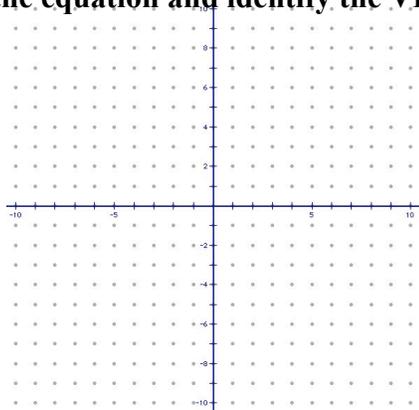


2.  $y = (x + 3)^2 - 7$

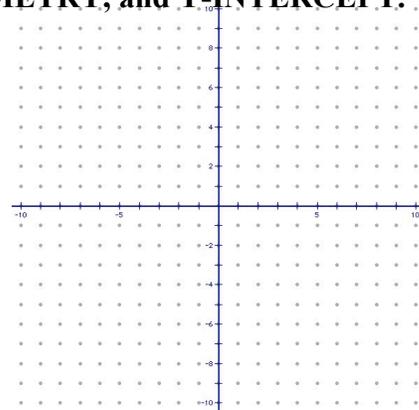


**Level 1: Graph the equation and identify the VERTEX, AXIS of SYMMETRY, and Y-INTERCEPT.**

1.  $y = x^2 - 4x + 5$



2.  $y = (x + 3)^2 - 7$



**Level 2: Solve the equation using any method.**

1.  $x^2 - 6x + 5 = 0$

2.  $-19 = (x + 3)^2 - 7$

3.  $2x^2 - 14 = 7x$

**Level 2: Solve the equation using any method.**

1.  $x^2 - 6x + 5 = 0$

2.  $-19 = (x + 3)^2 - 7$

3.  $2x^2 - 14 = 7x$

**Level 2: Solve the equation using any method.**

1.  $x^2 - 6x + 5 = 0$

2.  $-19 = (x + 3)^2 - 7$

3.  $2x^2 - 14 = 7x$

**Level 3: Answer the question.**

1. A softball is thrown into the air. The height  $h$  of the ball, in feet, can be written as a function of time  $t$ , in seconds, as  $h = -16t^2 + 40t + 5$ .

- (a) At what time does the ball reach its maximum height? (No decimal)
- (b) What is the maximum height the ball reaches?
- (c) When is the ball 9 feet above the ground? (Exact answer and Approx answer)
- (d) When does the ball hit the ground? (Exact answer and Approx answer)

**Level 3: Answer the question.**

1. A softball is thrown into the air. The height  $h$  of the ball, in feet, can be written as a function of time  $t$ , in seconds, as  $h = -16t^2 + 40t + 5$ .

- (a) At what time does the ball reach its maximum height? (No decimal)
- (b) What is the maximum height the ball reaches?
- (c) When is the ball 9 feet above the ground? (Exact answer and Approx answer)
- (d) When does the ball hit the ground? (Exact answer and Approx answer)

**Level 3: Answer the question.**

1. A softball is thrown into the air. The height  $h$  of the ball, in feet, can be written as a function of time  $t$ , in seconds, as  $h = -16t^2 + 40t + 5$ .

- (a) At what time does the ball reach its maximum height? (No decimal)
- (b) What is the maximum height the ball reaches?
- (c) When is the ball 9 feet above the ground? (Exact answer and Approx answer)
- (d) When does the ball hit the ground? (Exact answer and Approx answer)

**Level 4: Simplify the complex number and write in standard form.**

1.  $(3 - 7i) + (-2 + i)$

2.  $(-1 - 6i)(4 + 5i)$

3.  $(9 + 3i) - (6 - 2i)$

**Level 4: Simplify the complex number and write in standard form.**

1.  $(3 - 7i) + (-2 + i)$

2.  $(-1 - 6i)(4 + 5i)$

3.  $(9 + 3i) - (6 - 2i)$

**Level 4: Simplify the complex number and write in standard form.**

1.  $(3 - 7i) + (-2 + i)$

2.  $(-1 - 6i)(4 + 5i)$

3.  $(9 + 3i) - (6 - 2i)$

**Level 5: Factor Completely**

1.  $16x^2 - 9$

2.  $4x^2 - 8x + 4$

3.  $x^2 + 3x - 28$

**Level 5: Factor Completely**

1.  $16x^2 - 9$

2.  $4x^2 - 8x + 4$

3.  $x^2 + 3x - 28$

**Level 5: Factor Completely**

1.  $16x^2 - 9$

2.  $4x^2 - 8x + 4$

3.  $x^2 + 3x - 28$

**Level 6: Answer the question.**

1. An archer's arrow follows a parabolic path. The path of the arrow can be described by the equation  $y = -0.005x^2 + 2x + 5$ , with  $x$  representing the horizontal distance the arrow travels and  $y$  representing the vertical distance the arrow travels.

- a) Find the y-intercept. What does this value mean in the problem?
- b) What is the highest distance that the arrow travels?
- c) At what horizontal distance the arrow hit the ground?
- d) if you wanted to hit a the center of a bulls eye 4.5 feet in the air, at what horizontal distance would you place the target?

**Level 6: Answer the question.**

1. An archer's arrow follows a parabolic path. The path of the arrow can be described by the equation  $y = -0.005x^2 + 2x + 5$ , with  $x$  representing the horizontal distance the arrow travels and  $y$  representing the vertical distance the arrow travels.

- a) Find the y-intercept. What does this value mean in the problem?
- b) What is the highest distance that the arrow travels?
- c) At what horizontal distance the arrow hit the ground?
- d) if you wanted to hit a the center of a bulls eye 4.5 feet in the air, at what horizontal distance would you place the target?

**Level 6: Answer the question.**

1. An archer's arrow follows a parabolic path. The path of the arrow can be described by the equation  $y = -0.005x^2 + 2x + 5$ , with  $x$  representing the horizontal distance the arrow travels and  $y$  representing the vertical distance the arrow travels.

- a) Find the y-intercept. What does this value mean in the problem?
- b) What is the highest distance that the arrow travels?
- c) At what horizontal distance the arrow hit the ground?
- d) if you wanted to hit a the center of a bulls eye 4.5 feet in the air, at what horizontal distance would you place the target?