

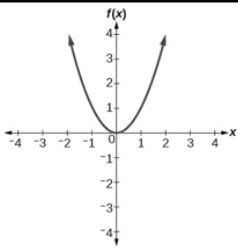
# Algebra I Readiness Focus

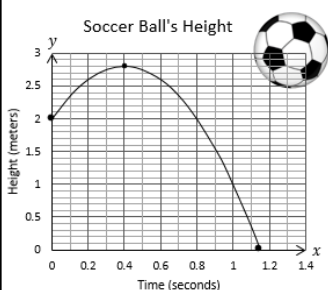
**A.6(A) *determine*** the domain and range of quadratic functions and represent the domain and range using inequalities.

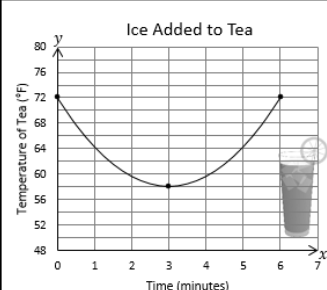
## Activity Directions:

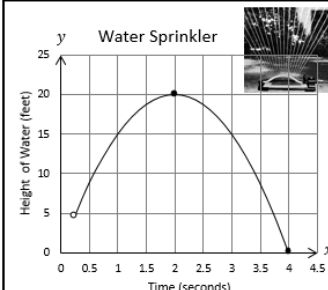
Items Needed: *Domain and Range for Quadratic Functions* book, scissors

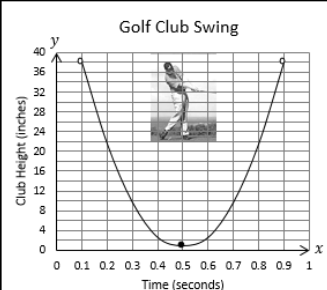
1. Copy the book for each student. Students will cut apart the pages and staple into a book when finished.
2. Students will complete the pages of the book to identify the domain and range in relation to a quadratic function. They will interpret graphs and write descriptions in the spaces provided. Example explanations are shown below.
3. The book can be placed in a math journal and reviewed before testing.
4. Have students practice questions coded to TEKS A.6A.

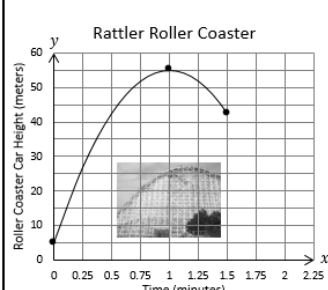
<p>Domain and Range for Quadratic Functions</p> <p>Completed by: _____</p>	 <p>Domain: <math>(-\infty, \infty)</math> Range: <math>[0, \infty)</math></p>
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<p>Soccer Ball's Height</p> 	<p>Domain: <math>0 \leq x \leq 1.15</math></p> <p>Range: <math>0 \leq y \leq 2.8</math></p> <p>Interpretation of Graph: <i>The graph shows the height of a soccer ball over a span of time. The x-axis indicates time measured in seconds. The y-axis indicates the height of the ball measured in meters. Each point on the quadratic function gives the height of the soccer ball at that time.</i></p> <p style="text-align: right;">pg 2</p>
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<p>Ice Added to Tea</p> 	<p>Domain: <math>0 \leq x \leq 6</math></p> <p>Range: <math>58 \leq y \leq 72</math></p> <p>Interpretation of Graph: <i>The graph shows the temperature of tea over a span of time. The x-axis indicates time measured in minutes. The y-axis indicates the temperature in degrees Fahrenheit. Each point on the quadratic function gives the temperature of the tea at that time.</i></p> <p style="text-align: right;">pg 3</p>
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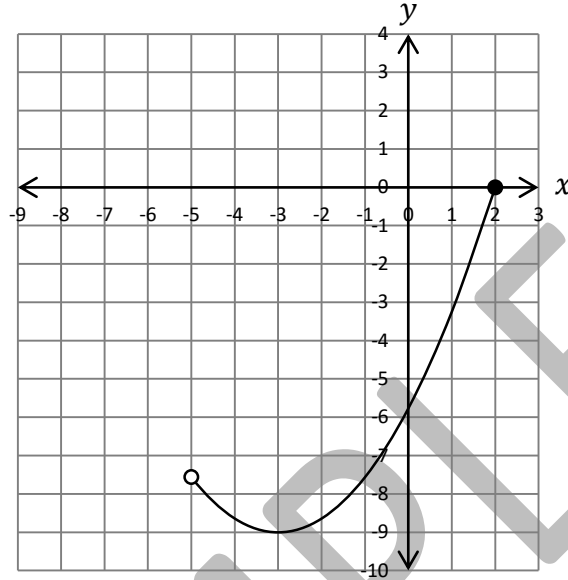
<p>Water Sprinkler</p> 	<p>Domain: <math>0.25 &lt; x \leq 4</math></p> <p>Range: <math>0 \leq y \leq 20</math></p> <p>Interpretation of Graph: <i>The graph shows the height of water sprayed by a water sprinkler over a span of time. The x-axis indicates time measured in seconds. The y-axis indicates the height of the water measured in feet. Each point on the quadratic function gives the height of the water at that time.</i></p> <p style="text-align: right;">pg 4</p>
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<p>Golf Club Swing</p> 	<p>Domain: <math>0.1 &lt; x &lt; 0.9</math></p> <p>Range: <math>1 \leq y &lt; 38</math></p> <p>Interpretation of Graph: <i>The graph shows the height of a golf club over a span of time. The x-axis indicates time measured in seconds. The y-axis indicates the height of the club measured in inches. Each point on the quadratic function gives the height of the golf club at that time.</i></p> <p style="text-align: right;">pg 5</p>
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<p>Rattler Roller Coaster</p> 	<p>Domain: <math>0 \leq x \leq 1.5</math></p> <p>Range: <math>5 \leq y \leq 55</math></p> <p>Interpretation of Graph: <i>The graph shows the height of a roller coaster car over a span of time. The x-axis indicates time measured in minutes. The y-axis indicates the height of the car measured in meters. Each point on the quadratic function gives the height of the car at that time.</i></p> <p style="text-align: right;">pg 6</p>
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**A.6(A) determine** the domain and range of quadratic functions and represent the domain and range using inequalities.

1. What is the domain of the function graphed below?



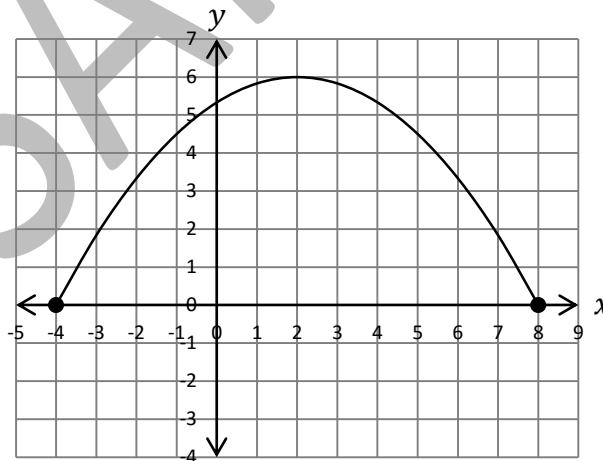
**A**  $-5 < x \leq 2$

**B**  $-7.5 < x \leq 2$

**C**  $0 \leq x \leq -9$

**D**  $0 < x \leq -6$

2. What is the range of the function graphed below?



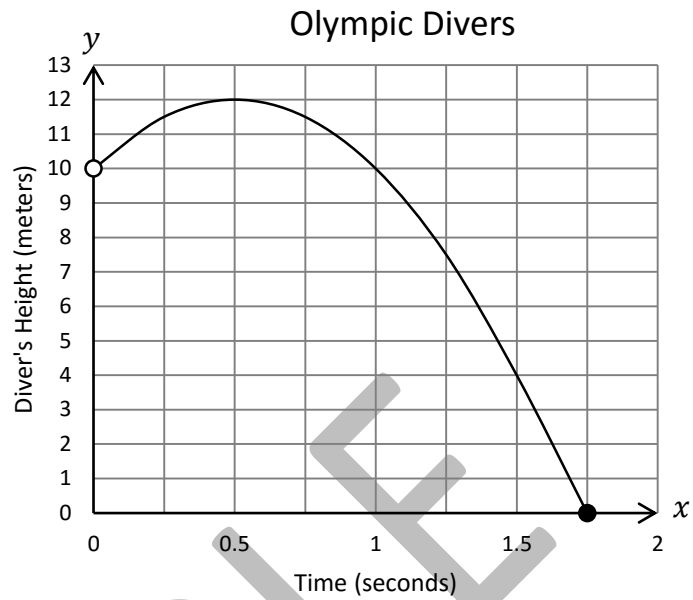
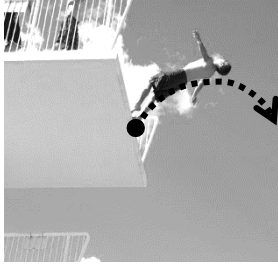
**F**  $-4 \leq y \leq 8$

**G**  $-4 < y < 8$

**H**  $0 \leq y \leq 6$

**J**  $0 < y < 6$

3. Olympic divers propel off of a platform that is 10 meters high. The graph shows the path of the diver from the platform.



What is the range of the graphed function?

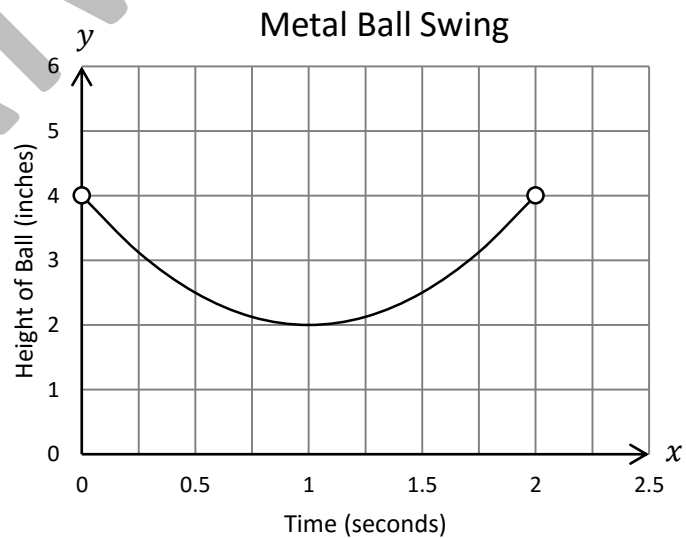
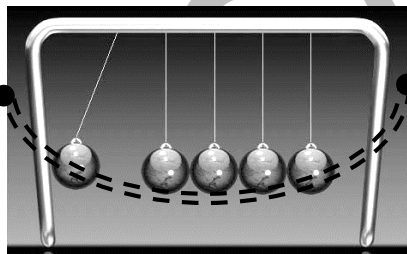
**A**  $10 < y \leq 12$

**C**  $10 < y \leq 1.75$

**B**  $0 < y \leq 1.75$

**D**  $0 \leq y \leq 12$

4. When put in motion, metal ball swings move along a path that is quadratic in nature. The graph displays the path of the swing.



What is the domain of the graphed function?

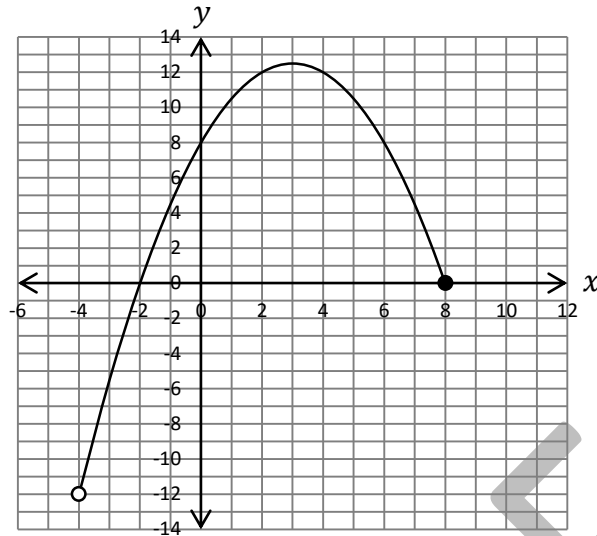
**F**  $2 \leq x < 4$

**H**  $1 \leq x < 2$

**G**  $0 < x < 2$

**J**  $4 < x \leq 1$

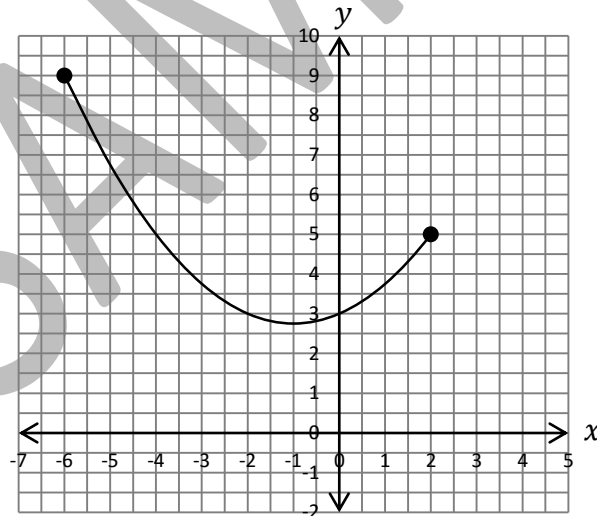
5. A function is graphed below.



Based on the graph, which of the following is true?

- A The domain of the function is  $-4 \leq x \leq 8$ .
- B The range of the function is  $-12 < y \leq 12.5$ .
- C The domain of the function is  $0 \leq x \leq 8$ .
- D The range of the function is  $-12 < y \leq 8$ .

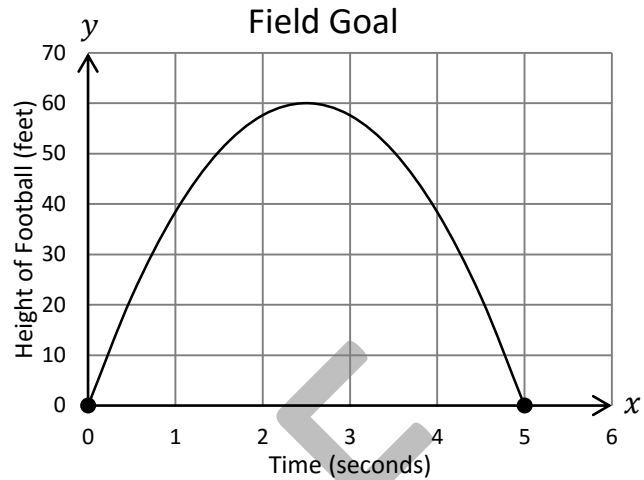
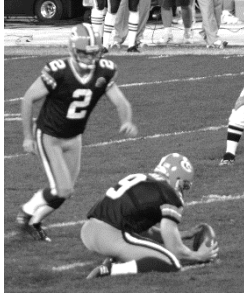
6. A function is graphed below.



Based on the graph, which of the following is true?

- F The domain of the function is  $-6 \leq x \leq 2$ .
- G The range of the function is  $3 \leq y \leq 9$ .
- H The domain of the function is  $3 \leq x \leq 5$ .
- J The range of the function is  $0 \leq y \leq 2$ .

7. A football follows a quadratic path when a field goal is attempted. The graph shows a possible path of the football as it travels to the goal post.



What is the range of the graphed function?

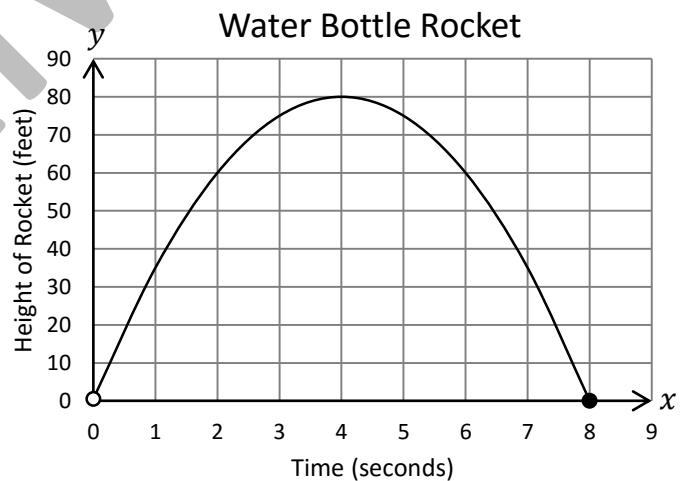
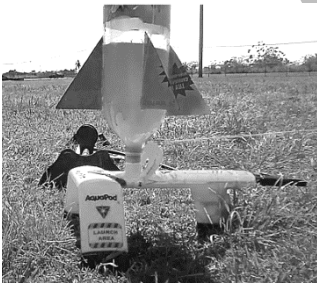
**A**  $0 \leq y \leq 5$

**B**  $0 \geq y \geq 5$

**C**  $0 \leq y \leq 60$

**D**  $0 \geq y \geq 60$

8. A rocket team is using trajectory software to study the path of a bottle rocket launched without a parachute. The graph displays the path of the rocket.



What is the domain of the graphed function?

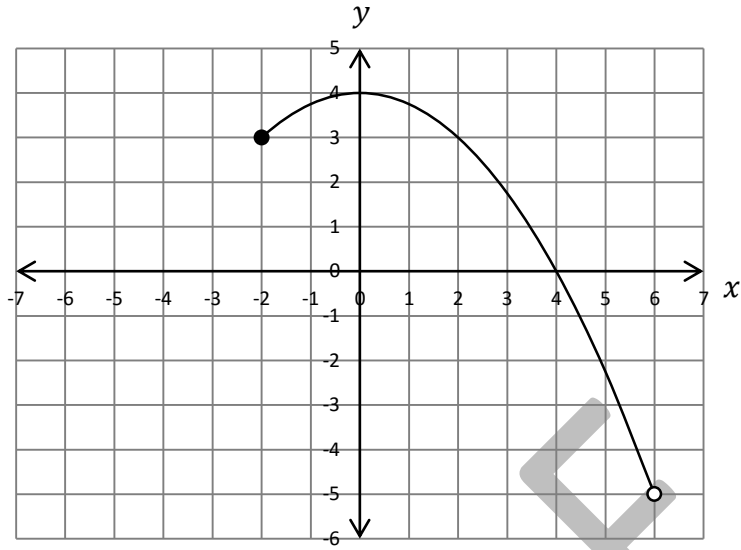
**F**  $0 < x \leq 80$

**G**  $0 < x \leq 8$

**H**  $80 \leq x \leq 8$

**J**  $0 > x \leq 8$

9. What is the domain of the function graphed below?



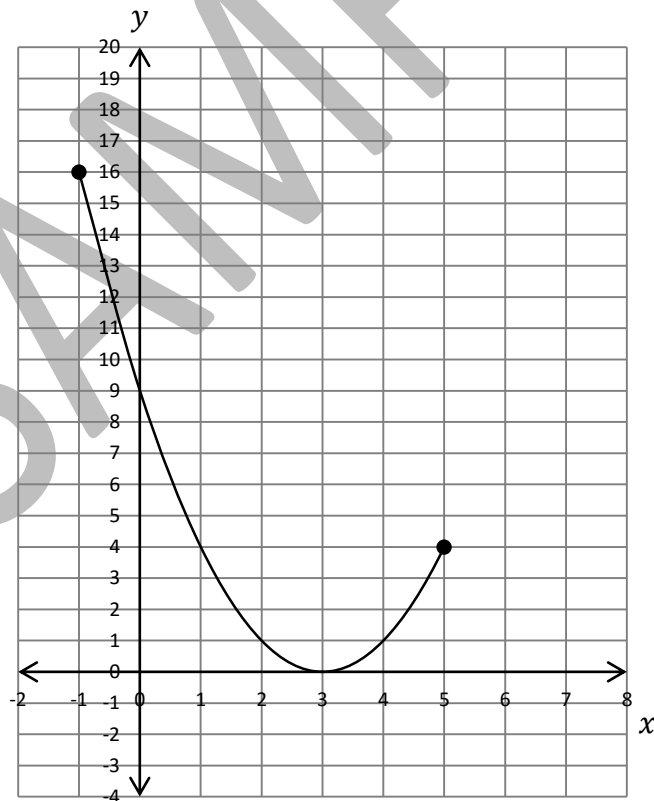
A  $-5 < x \leq -2$

B  $-2 \leq x < -5$

C  $-5 < x \leq 4$

D  $-2 \leq x < 6$

10. What is the range of the function graphed below?



F  $0 \leq y \leq 16$

G  $5 \leq y \leq 16$

H  $-1 \leq y \leq 5$

J  $9 \leq y \leq 5$