Algebra I

1st Six Weeks Test

First Name: _____

Last Name: _____

Date: _____

Class Period #: _____

1. **A.3B Linear Functions**

The graph below shows the relationship between the number of dollars a worker earns and the number of hours worked.

Which statement below is true?

A A worker earns $320 per month.

B A worker earns $40 per day.

C A worker earns $8 per hour.

D A worker earns $160 per week.

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2. **A.3B Linear Functions**

The table shows the playing time in minutes of high-definition videos and the file size of these videos in megabytes (MB).

Videos

Playing Time, x (min)	File Size, y (MB)
0.5	60
1.5	180
2	240
4.5	540
5	600

What is the rate of change depicted in this situation?

A 120 megabytes per minute

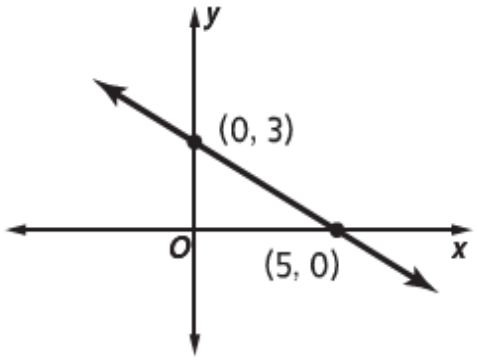
B 60 megabytes per minute

C 80 megabytes per minute

D 100 megabytes per minute

3. A.3C Interpreting Graphs of Functions

Which of the following best describes the graph?



A The *x*-intercept is 3; the *y*-intercept is 5 and the slope of the line is positive

B The *x*-intercept is 5; the *y*-intercept is 3 and the slope of the line is positive

C The *x*-intercept is 3; the *y*-intercept is 5 and the slope of the line is negative

D The *x*-intercept is 5; the *y*-intercept is 3 and the slope of the line is negative

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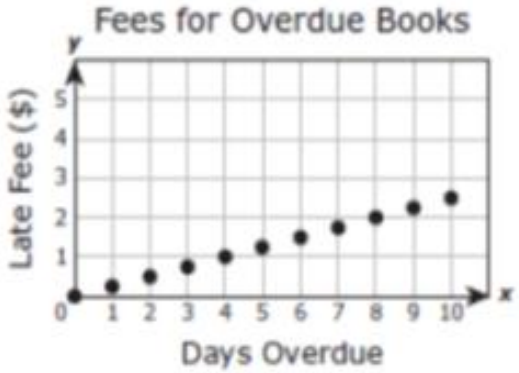
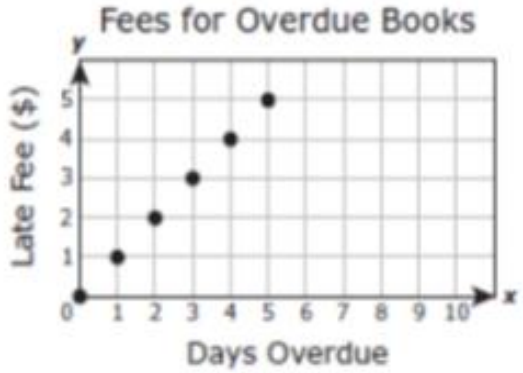
4. A.3C Interpreting Graphs of Functions

The late fee for overdue books at a library is $0.25 per day per book, with a maximum late fee of $5.00 per book. Which graph models the total late fee for 3 books that were checked out on the same day and are overdue?

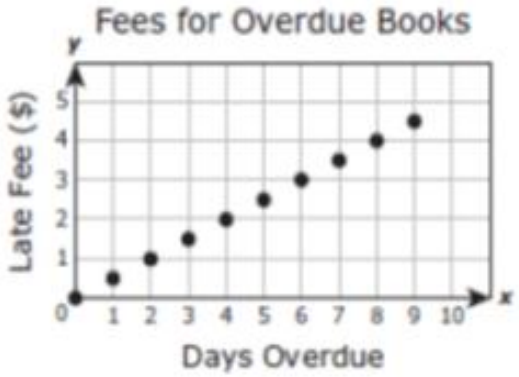
A



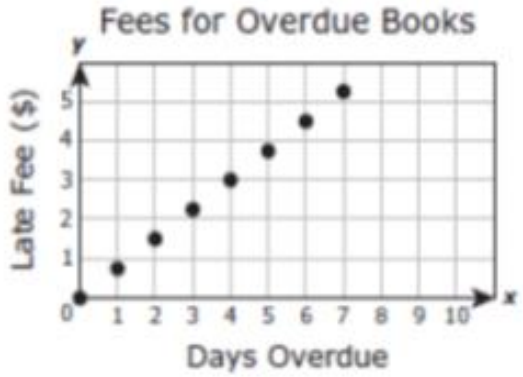
C



B

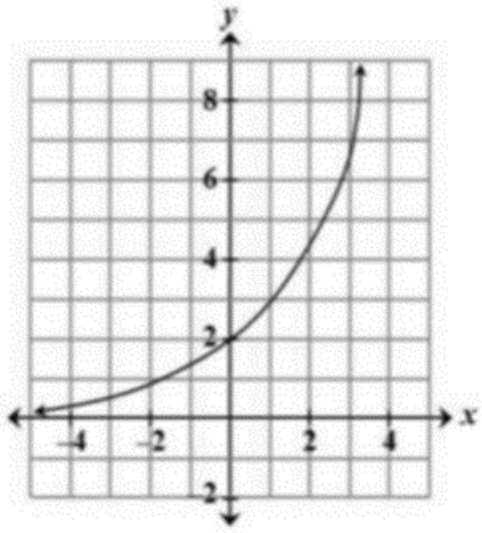


D



5. **A.9D Exponential Functions and Equations**

The graph shows an exponential function.



What is the y-intercept of the function?

a) $(0, 2)$ b) $(2, 0)$ c) $(-2, 0)$ d) $(0, -2)$

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6. **A.9A Exponential Functions**

What is the domain of the function $y = 2(15^x)$?

A $-\infty < x < \infty$

B $-2 < x < 15$

C $-\infty < y < \infty$

D $-\infty < y < 2$

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7. **A.2A Relations**

Given the function $f(x) = \frac{1}{2}x + 1$ and the range $\{-1, 0, 1\}$, what is the domain of the function?

A $\left\{-\frac{1}{2}, -1, -1\frac{1}{2}\right\}$

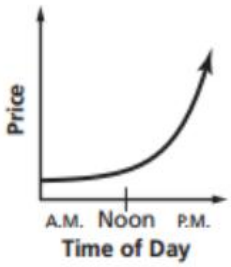
B $\{-4, -2, 0\}$

C $\left\{1\frac{1}{2}, 1, \frac{1}{2}\right\}$

D $\{0, 1, 2\}$

8. **A.2A Relations**

Which statement best describes the graph of the price of one share of a company's stock shown at the right?



A The price increased more in the morning than in the afternoon.

B The price decreased more in the morning than in the afternoon.

C The price increased more in the afternoon than in the morning.

D The price decreased more in the afternoon than in the morning.

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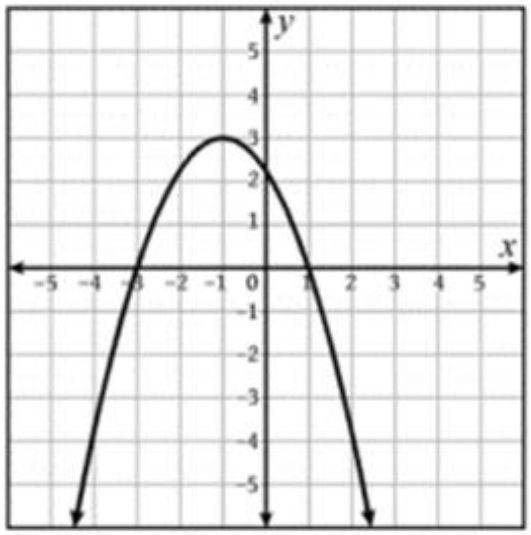
9. **A.6A Quadratic Functions and Equations**



What is the range of the relation?

A $-3 \le y \le 1$

B $y \le 3$

C $\{-3, 1\}$

D all real numbers

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10. **A.12B Expressions, Equations, and Functions**

If $g(x) = x^2 - 5x + 3$, find $g(-2)$.

A) 17

B) 11

C) 5

D) –3

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11. A.12B Expressions, Equations, and Functions

If $h(r) = \frac{2}{3}r - 6$, what is the value of $h(-9)$?

A) 12 B) 0 C) $-6\frac{2}{3}$ D) −12

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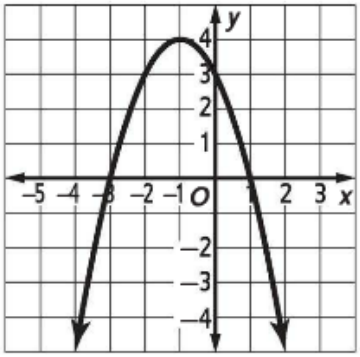
12. A.7A Expressions, Equations & Functions



Which of the following best describes the graph?

A The x-intercepts are -3 and 1, the y-intercept is 3, and the axis of symmetry is $y = 4$.

B The x-intercepts are -3 and 1, the y-intercept is 3, and the axis of symmetry is $x = -1$.

C The x-intercepts are -1 and 3, the y-intercept is 3, and the axis of symmetry is $y = 4$.

D The x-intercepts are -3 and 1, the y-intercept is 4,

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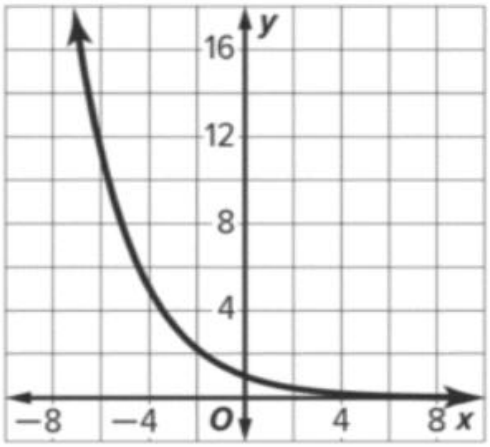
13. A.9A Exponential Functions and Equations

Which of the following represents the range of the function?



A All real numbers

B $0 \leq y < 1$

C $y > 1$

D $y > 0$

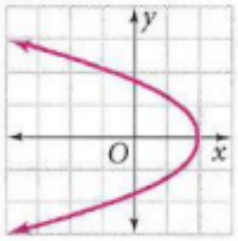
14. A.12A Functions

Determine which relation is not a function.

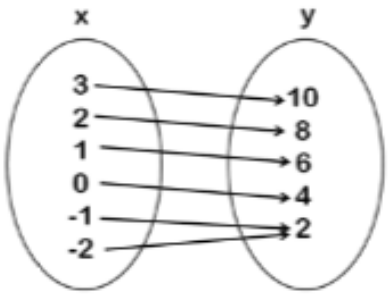
A)

x	y
- 1	-3
6	-2
9	-1
1	3

B)



C)



D) (2, 5), (4, -2), (3,3), (5,4), (-2, 5)

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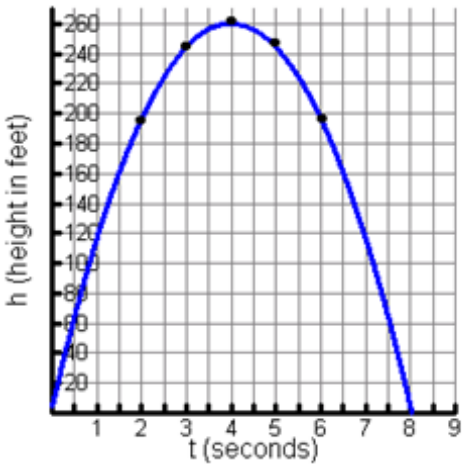
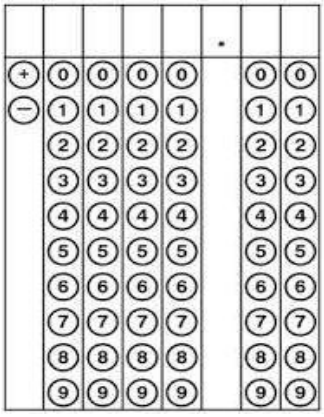
15. A.6A Quadratic Functions and Equations

What is the greatest height of the rocket?





Record your answer and fill in the bubbles on your answer document.