8th Grade Packet 7 ELA, Math and Science Answer Keys
1. Who was Satchel Paige?
   A. the first black baseball player in the Major Leagues
   B. a pitcher for the Brooklyn Dodgers baseball team
   C. a talented baseball pitcher in the Negro Leagues in California
   D. a major civil rights activist in the 1940s

2. What does the author describe throughout most of the text?
   A. the reasons why Jackie Robinson was signed to the Major Leagues, rather than Satchel Paige
   B. the way Satchel Paige felt about not being the first black baseball player in the Major Leagues
   C. the significance of the integration of Major League baseball to the civil rights movement
   D. the personal relationship between Satchel Paige and Jackie Robinson

3. Read this statement.

Major League team owners were worried about how white baseball fans would react to a black baseball player joining their league.

What evidence from the text supports this statement?
   A. "Jackie did not balk at Rickey's plan to start him in the minors, in faraway Montreal. Satchel never could have abided the affront."
   B. "It was Paige who had proved [...] that white fans along with black would come to see great black ballplayers, and that proof was what pushed Rickey to rip down baseball's racial barricades."
   C. "[Paige] refused to play in a town unless it supplied lodging and food to him and his teammates, a defiance for which young civil rights workers would get arrested and lionized a generation later."
   D. "Satchel realized he was a specter from the past rather than the harbinger of the more racially tolerant future the Dodgers wanted."
4. What was a main reason why Satchel Paige felt that he should have been the first black baseball player in the Major League, instead of Jackie Robinson?

A. He was older than Jackie Robinson, and therefore could better handle being the first black Major League baseball player.

B. He was a better baseball player than Jackie Robinson, and had proven himself against the best white players.

C. He cared about civil rights issues and racial tolerance much more than Jackie Robinson did.

D. He was already prepared to be the first black Major League player because the Cleveland Indians had tried to sign him.

5. What is the main idea of this text?

A. Branch Rickey chose to sign Jackie Robinson to his Major League baseball team rather than Satchel Paige because Jackie was a stronger player and a more likeable person.

B. Satchel Paige was such a talented pitcher that his catchers had to cushion their gloves in order to handle his pitches.

C. Although Jackie Robinson was the first black baseball player in the Major League, most other black baseball players were resentful of his success.

D. Satchel Paige was a talented black baseball pitcher who laid the groundwork for Major League baseball to include black players like Jackie Robinson.

6. Read this quote from the text.

"'I'd been the guy who'd started all that big talk about letting us in the big time,' Satchel wrote in his memoir. 'I'd been the one who everybody'd said should be in the majors.' To be denied that chance hurt as badly as 'when somebody you love dies or something dies inside you.'"

Why might the author have included this quote from Satchel Paige's memoir?

A. to encourage the reader to read Satchel Paige’s memoir

B. to prove that Satchel Paige would have been a better Major League player than Jackie Robinson

C. to indicate that somebody Satchel Paige loved had died very recently

D. to show how strongly Satchel Paige felt about not being chosen to play in the majors
7. Choose the answer that best completes the sentence.

Jackie Robinson was the first black baseball player signed from the Negro Leagues to the Major Leagues, _____ it was Satchel Paige who brought the spotlight to the Negro Leagues.

   A. even though
   B. because
   C. before
   D. for instance

8. How did Satchel Paige help bring the spotlight of Major League team owners' attention to the Negro Leagues?

Paige helped bring Major League attention to the Negro Leagues with his talent. He "was so dominating" that "Major League owners noticed."

Students may also mention that by drawing white fans as well as black fans to his games, he drew the attention of Major League team owners like Branch Rickey.

9. Why did Branch Rickey, president of the Dodgers, most likely choose to sign Jackie Robinson? Give at least two details from the text to support your answer.

Answers may vary but should be supported by the text. Students may mention that Jackie Robinson was young, a college boy, and an Army veteran "who Rickey felt could bear the ruthless scrutiny" of being the first black player in Major League baseball. He also would be willing to start in the minors, and "had the table manners whites liked." Students may recognize that Rickey probably felt like Jackie Robinson's personality and image would go over better with white audiences, which made him a better "harbinger" of the "racially tolerant future" he wanted.
10. Did the Dodgers make a mistake by choosing Jackie Robinson over Satchel Paige to be their first black baseball player? Use evidence from the text to support your argument.

Answers may vary as long as they are supported by the text. Students may argue that the Dodgers made a mistake by not choosing Satchel Paige, because Paige was a beloved and seasoned ballplayer, and was a better player than Robinson. Paige had also been the person who'd drawn attention to the Negro Leagues over the years, so he would have been a strong choice to be the Dodgers' first black player.

On the other hand, students may argue that the Dodgers did not make a mistake in choosing Robinson over Paige, because Robinson was younger, well-mannered, and willing to work his way up from the minors. More importantly, Robinson more likely could handle the scrutiny of being the first black player in the Major Leagues, which, given the racial climate, was perhaps even more important than being a strong player.
Identify the slope as positive, negative, zero or undefined from each graph.

1) [Graph 1]
   - Positive slope

2) [Graph 2]
   - Negative slope

3) [Graph 3]
   - Zero slope

4) [Graph 4]
   - Undefined slope

5) [Graph 5]
   - Zero slope

6) [Graph 6]
   - Positive slope

7) [Graph 7]
   - Positive slope

8) [Graph 8]
   - Undefined slope

9) [Graph 9]
   - Negative slope
A) Draw a line through the given coordinates and identify the types of slopes.

1) (5, 1) and (2, 4)  
   Positive slope

2) (–2, 3) and (–2, –5)  
   Undefined slope

3) (–1, 2) and (–4, 0)  
   Negative slope

4) (–4, –2) and (1, 2)  
   Positive slope

5) (0, 5) and (4, 1)  
   Negative slope

6) (–3, –4) and (5, –4)  
   Zero slope

B) Draw a line through the point for the given type of slope.

1) Positive slope

2) Zero slope

3) Negative slope
Calculate the rise and run to find the slope of each line.

1) Slope = \( \frac{2}{1} \)

2) Slope = \(-\frac{5}{4}\)

3) Slope = \(\frac{7}{5}\)

4) Slope = \(-\frac{7}{4}\)

5) Slope = \(\frac{3}{5}\)

6) Slope = \(-\frac{1}{4}\)

7) Slope = \(3\)

8) Slope = \(-\frac{1}{2}\)

9) Slope = \(\frac{1}{6}\)
Speed, Velocity, and Acceleration Problems

1. Pete is driving down 7th street. He drives 150 meters in 18 seconds. Assuming he does not speed up or slow down, what is his speed in meters per second?

   \[
   \text{Speed} = \frac{\text{distance}}{\text{time}} = \frac{150 \text{ m}}{18 \text{ s}} = 8.33 \text{ m/s}
   \]

2. A person jogs 4.0 km in 32 minutes, then 2.0 km in 22 minutes, and finally 1.0 km in 16 minutes. What is the jogger’s average speed in km per minute?

   You could calculated the speed for the three different times and then average the three answers by adding them up and dividing by 3, but it is easier to add up the total distance
and the total time and calculate the average speed. You get the same answer both ways, but the second way is easier and more efficient.

Total distance = 4.0 km + 2.0 km + 1.0 km = 7.0 km
Total time = 32 min + 22 min + 16 min = 70 min

\[
\text{Speed} = \frac{\text{distance}}{\text{time}} = \frac{7.0 \text{ km}}{70 \text{ min}} = 0.1 \text{ km/min}
\]

Note that the question asks for the answer to be in km/min and double check your units. It is always a good idea to check the units before and after doing a problem.

3. A train travels 120 km in 2 hours and 30 minutes. What is its average speed?

For the time, 2 hours and 30 minutes is 2.5 hours since there are 30 minutes in 1 hour.

\[
\text{Speed} = \frac{\text{distance}}{\text{time}} = \frac{120 \text{ km}}{2.5 \text{ hr}} = 48 \text{ km/hr}
\]

4. A plane’s average speed between two cities is 600 km/hr. If the trip takes 2.5 hrs, how far does the plane fly?

\[
\text{Speed} = \frac{\text{distance}}{\text{time}}
\]

So, \[
\text{Distance} = \text{speed} \times \text{time} = 600 \text{ km/hr} \times 2.5 \text{ hr} = 1500 \text{ km}
\]

5. George walks to a friend’s house. He walks 750 meters North, then realizes he walked too far. He turns around and walks 250 meters South. The entire walk takes him 13 seconds. What is his speed per second?

Total distance = 750 m + 250 m = 1000 m

\[
\text{Speed} = \frac{\text{distance}}{\text{time}} = \frac{1000 \text{ m}}{13 \text{ s}} = 76.92 \text{ m/s}
\]
This is a good example of a problem with unrealistic numbers. If George could actually walk/run at speed, he would be doing about 170 miles/hr.

6. **In problem #5, what was George’s velocity in meters per second? (hint: draw a picture to find his displacement)**

   There are two things about velocity that are important for you to know.
   
   1. Velocity has to have a direction. For problem #5, George ends up North of his starting point. So, his direction has to be part of the answer.
   2. The formula for velocity is displacement divided by time. George may have covered a distance of 1000 meters, but since he walked north 750 m and then south 250 m, he is really only 500 meters from his starting point. This is his displacement.

   \[
   \text{Velocity} = \frac{\text{displacement}}{\text{time}}
   \]

   \[
   = \frac{500 \text{ m}}{13 \text{ s}}
   \]

   \[
   = 38.46 \text{ m/s North}
   \]

   Concepts, like velocity, that have both a number answer and a direction are called **Vectors** or **Vector quantities**.

   Speed is not a vector since direction is not a part of the answer. Concepts, like speed, that have a number answer but do not need to have direction are called **Scalar** quantities.

7. **A roller coaster’s velocity at the top of a hill is 10 m/s. Two seconds later it reaches the bottom of the hill with a velocity of 26 m/s. What was the acceleration of the coaster?**

   \[
   \text{Change in velocity} = 26 \text{ m/s} - 10 \text{ m/s} = 16 \text{ m/s}
   \]

   \[
   \text{Acceleration} = \frac{\text{change in velocity}}{\text{time}}
   \]

   \[
   = \frac{16 \text{ m/s}}{2 \text{ s}}
   \]

   \[
   = 8 \text{ m/s}^2
   \]
8. A roller coaster is moving at 25 m/s at the bottom of a hill. Three seconds later it reaches the top of the hill moving at 10 m/s. What was the acceleration of the coaster?

In this problem, change in velocity will need to be calculated. Since the final velocity is 10 m/s and the initial (or starting) velocity is 25 m/s:

\[
\text{Change in velocity} = \text{final velocity} - \text{initial velocity} \\
= 10 \text{ m/s} - 25 \text{ m/s} \\
= -15 \text{ m/s}
\]

Acceleration = change in velocity / time

\[
= -15 \text{ m/s} / 3 \text{ s} \\
= -5 \text{ m/s}^2
\]

The negative answer shows that the roller coaster is slowing or decelerating. Since there is a number answer and direction (because of the negative sign), acceleration is a vector quantity.

9. A car traveling at 15 m/s starts to decelerate steadily. It comes to a complete stop in 10 seconds. What is its acceleration?

\[
\text{Change in velocity} = \text{final velocity} - \text{initial velocity} \\
= 0 \text{ m/s} - 15 \text{ m/s} \\
= -15 \text{ m/s}
\]

Acceleration = change in velocity / time

\[
= -15 \text{ m/s} / 10 \text{ s} \\
= -1.5 \text{ m/s}^2
\]

10. A child drops a ball from a window. The ball strikes the ground in 3.0 seconds. What is the velocity of the ball the instant before it hits the ground?

The acceleration of an object that is dropped is the same as gravity. On Earth, gravity is 9.8 m/s². You may often hear this referred to as “the acceleration due to gravity”.

Also, the velocity of the ball at the moment it is dropped is 0 m/s. This is the initial velocity.

\[
\text{Change in velocity} = \text{acceleration} \times \text{time}
\]
\begin{align*}
&= 9.8 \text{ m/s}^2 \times 3.0 \text{ s} \\
&= 29.4 \text{ m/s}
\end{align*}

Change in velocity = final velocity – initial velocity
Therefore, Final velocity = change in velocity + initial velocity
\begin{align*}
&= 29.4 \text{ m/s} + 0 \text{ m/s} \\
&= 29.4 \text{ m/s}
\end{align*}

11. A boy throws a ball straight up into the air. It reaches the highest point of its flight after 4 seconds. How fast was the ball going when it left the boy’s hand?

The ball slows down when it is thrown straight up because gravity is working against it. So acceleration is -9.8 m/s\(^2\).

At the highest point, the velocity of the ball is 0 m/s. This is the final velocity for this problem. (In other words, when an object is thrown straight up in the air it comes to a complete stop before falling back down.)

Change in velocity = acceleration x time
\begin{align*}
&= -9.8 \text{ m/s}^2 \times 4 \text{ s} \\
&= -39.2 \text{ m/s}
\end{align*}

Change in velocity = final velocity – initial velocity
\begin{align*}
&= 0 \text{ m/s} - (-39.2 \text{ m/s}) \\
&= 0 \text{ m/s} + 39.2 \text{ m/s} \\
&= 39.2 \text{ m/s}
\end{align*}

12. A train moves from rest to a speed of 25 m/s in 30.0 seconds. What is its acceleration?

If an object is at rest, the velocity is 0 m/s
Change in velocity = final velocity – initial velocity
\begin{align*}
&= 25 \text{ m/s} - 0 \text{ m/s} \\
&= 25 \text{ m/s}
\end{align*}

Acceleration = change in velocity / time
13. If a train going 60 m/s hits the brakes, and it takes the train 1 minute 25 seconds to stop, what is the train’s acceleration?

\[
\text{Change in velocity} = \text{final velocity} - \text{initial velocity} = 0 \text{ m/s} - 60 \text{ m/s} = -60 \text{ m/s}
\]

1 minute and 25 seconds is 60 s + 25 s = 85 s

\[
\text{Acceleration} = \frac{\text{change in velocity}}{\text{time}} = \frac{-60 \text{ m/s}}{85 \text{ s}} = -0.71 \text{ m/s}^2
\]

14. How long will it take a car to go from a complete stop to 44 km/hr if they are accelerating at 5 km/hr\(^2\)?

\[
\text{Time} = \frac{\text{change in velocity}}{\text{acceleration}} = \frac{44 \text{ km/hr}}{5 \text{ km/hr}^2} = 8.8 \text{ hr}
\]

In the week 6’s answer key, an example of rearranging a formula to solve for a variable in the denominator was provided. The same principles apply to rearranging this formula for time:

\[
\text{Acceleration} = \frac{\text{change in velocity}}{\text{time}}
\]

15. How long will it take a car to accelerate from 15.2 m/s to 23.5 m/s if the car has an average acceleration of 3.2 m/s\(^2\)?

\[
\text{Time} = \frac{\text{change in velocity}}{\text{acceleration}} = \frac{(23.5 \text{ m/s} - 15.2 \text{ m/s})}{3.2 \text{ m/s}^2} = 8.3 \text{ m/s} / 3.2 \text{ m/s}^2 = 2.59 \text{ s}
\]