8th Grade

Week 5

ELA and Math Answer Keys

1. Joe and Sam are on their way to which location?

    A. Dauphin Borough

    B. the back roads of Pennsylvania

    C. New York City

    D. Pittsburgh

2. The main setting of this story is

    A. Pittsburgh on a hot summer day

    B. Rockville Bridge on a lazy afternoon

    C. along back roads over the course of a day

    D. an airplane flight to Texas

3. Read the sentences: "Sam hated rushing things and insisted that they take back roads. Joe was in."

Based on this information, it can be concluded that

    A. Sam and Joe did not want to go to Pittsburgh.

    B. Sam and Joe are generally relaxed on road trips.

    C. Sam and Joe are generally very stressed on road trips.

    D. Sam and Joe have known each other for a very long time.

4. How do people in Dauphin Borough most likely feel about the statue?

    A. They believe it is a sign from a higher power.

    B. They embrace its presence.

    C. They are confused by its miraculous appearance.

    D. They pay little attention to it.

5. This story is mostly about

    A. the difference between natural and man-made landmarks

    B. the importance of taking time to appreciate nature

    C. a friendship formed through the bond of sharing a car ride together

    D. the beautiful and interesting things to be discovered along back roads

6. The tone of the writing throughout the passage can be described as

    A. frantic, or hurried

    B. relaxed and smooth

    C. suspenseful and unusual

    D. exhilarating, or exciting

7. Choose the answer that best completes the sentence below.

Joe and Sam decide not to take the highway _____ they could drive through back roads.

    A. even though

    B. so

    C. instead

    D. next

8. The presence and appreciation of nature is evident throughout the story. Identify at least three phrases or sentences that support this claim.

The following phrases and sentences suggest that the presence and appreciation of nature is evident throughout the story:

    "It was the Susquehanna River that was branching out before them, beautiful and mighty." "[Sam] stretched out in the beauty that lay before him." "[Joe] yelled, 'This place is incredible.'" Direct references to and images of nature include: "sunlight dappled the water," "freshly cut green grass," and "deep cool air."]

9. What did Joe and Sam enjoy about their trip?

Joe and Sam enjoyed seeing the beautiful river, reading historical markers, and learning about the Rockville Bridge and the Dauphin Borough "Statue of Liberty."

10. Sam and Joe's trip to Pittsburgh would have been quicker had they taken the highway. Why was it more worthwhile that they drove through the back roads?

Answers may vary and could include:

> A back road can be a longer, less direct or popular way to travel, when compared to a highway but it can also be very beautiful, enjoyable, and informative. Joe and Sam enjoyed their journey through the back roads because they saw beautiful things and learned about historical structures that they did not know about before. By taking the opportunity to drive through these hidden back roads, they were able to make discoveries and enjoy different scenic views of nature. This experience was worth the time they could've saved driving through a highway.

Finding the Slope of a Line

➤ **Use the information provided to find the slope of each line. State what the slope represents.**

1

Seconds	0	5	10
Feet	0	30	60

2

Hours	0	2	5
Dollars	0	18	45

6; feet per second

9; dollars per hour

3

Miles vs. Hours

4

Pounds vs. Bags
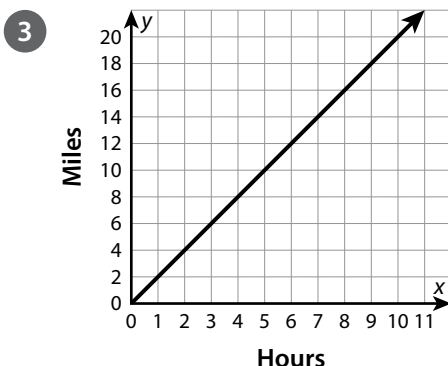
2; miles per hour

$\frac{2}{5}$; **pounds per bag**

5

Ounces vs. Pieces

6

Dollars vs. Tickets

$\frac{1}{4}$; **ounces per piece**
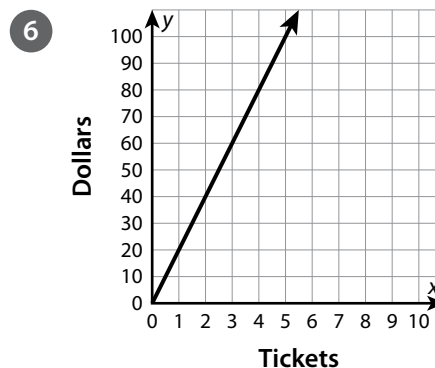
20; dollars per ticket

i-Ready

Finding the Slope of a Line *continued*

7

Cycles

Minutes

$\frac{5}{3}$; cycles per minute

8
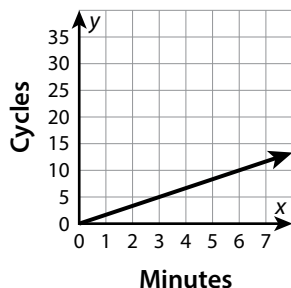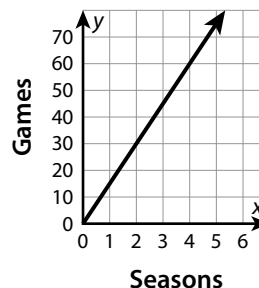
Games

Seasons

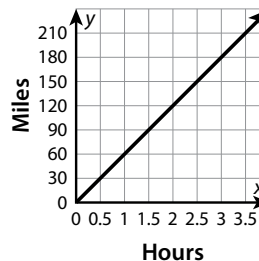15; games per season

9
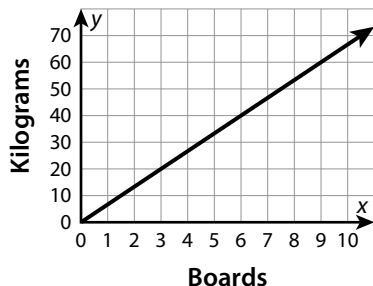
Kilograms

Boards

$\frac{20}{3}$; kilograms per board

10

Miles

Hours

60; miles per hour

11 Compare finding the slope using a table and using a graph.

Possible answer: When using a table, the coordinates are given to you. When using a graph, you have to determine the coordinates by looking at the graph. When using a table and a graph, you need to find the ratio of the vertical change (*y*-values) to the horizontal change (*x*-values) between two points.
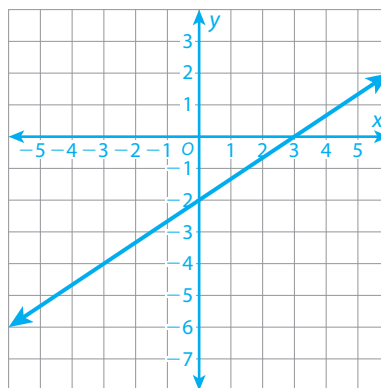
Graphing a Linear Equation Given in Any Form

➤ **Graph each linear equation on the grid provided. Be sure to label the units on the *x*- and *y*-axes.**
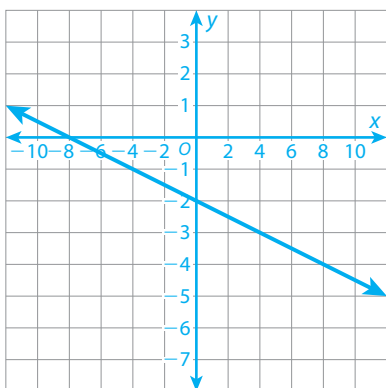
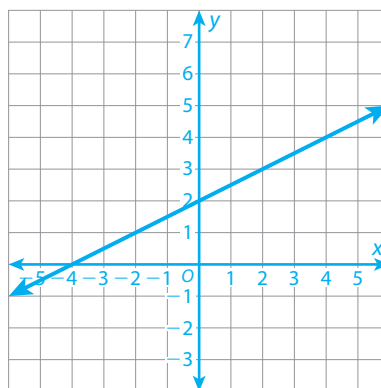**Possible graphs are shown.**

1 $5x + 2y = 10$
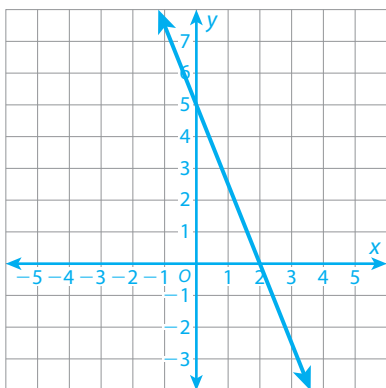
2 $200x - 300y = 600$

3 $-\dfrac{1}{2}x - 2y = 4$

4 $6x - 12y + 24 = 0$
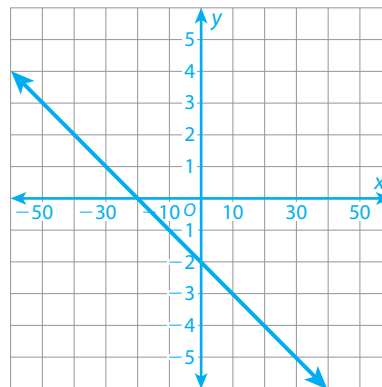
i-Ready

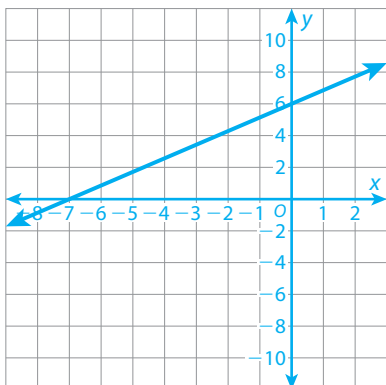# Graphing a Linear Equation Given in Any Form *continued*
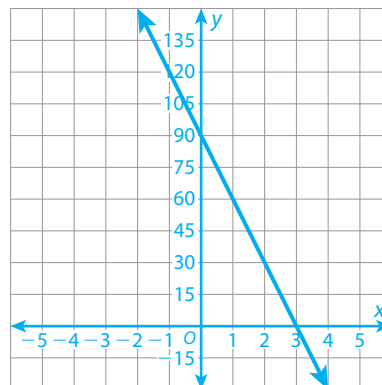
5 $-150x + 5y = 300$
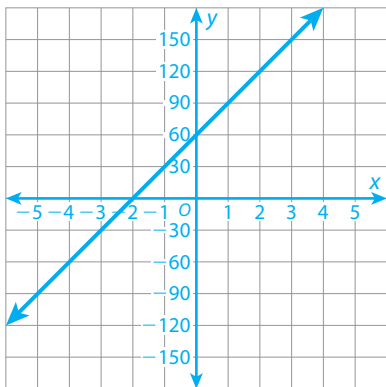
6 $-4x - 40y - 80 = 0$

7 $-6x + 7y = 42$

8 $10x + \frac{1}{3}y = 30$

9 Which method do you prefer for graphing linear equations that are not in the form $y = mx + b$?

Possible answer: I prefer to substitute 0 for *x* and then for *y* to find the intercepts. Rearranging the terms into slope-intercept form usually requires more steps.

8th Grade Science Answer Key

1. **Calculate the average speed (in meters/sec) if a golf cart runs 140 meters in 10 seconds**

   Speed   = distance/time

   = 140 m/ 10 s

   = _14 m/s_

2. **Calculate the average speed (in Km/hr) of Charlie who runs to the store 4 Km away in 30 minutes?**

   Problem #2 requires an answer in hours not minutes. 30 minutes = 0.5 hours

   Speed   =distance/time

   = 4km/0.5 hr

   = _8 km/hr_

3. **Calculate the distance (in Km) that Charlie runs if he maintains the average speed from question 2 for 1 hour**

   Distance = speed x time

   = 8 km/hr x 1 hr

   = _8 km_

   The answer for question 2 is 8 km/hr. This is read as 8 km per hour. It means that Charlie will cover a distance of _8 km for every hour_ he is running

4. **A bicycle rider travels 50.0 Km in 2.5 hours. What is the cyclist's average speed?**

   Speed   =distance/time
   = 50 km/ 2.5 hr
   = _20 km/hr_

5. **What is the average speed (in miles per hour) of the car that traveled a total of 200 miles in 5.5 hours.**

   Speed   =distance/time

   = 200 miles/5.5 hr
   = _36.36 miles/hr_

6. **What is the definition of the word PER?**
   PER can be defines as "for every". Answers may vary.

7. **How much time would it take for the sound of thunder to travel 2000 meters if sound travels a speed of 330 meters per sec.**

   Time = distance/speed

   = 2000 m/ 330 m/s

   = *6.06 s*

8. **How much time would it take for an airplane to reach its destination if it traveled at an average speed of 790 Km/hr for a distance of 5000 kilometers?**

   Time = distance/speed

   = 5000/ 790 km/hr

   = *6.33 hr*

9. **An ant can travel approximately 30 meters per minute. How many meters could an ant move in 45 minutes?**

   Note that the speed is 30 meters per minute. This is 30 m/min

   Distance = speed x time

   = 30 m/min x 45 min

   = *1350 m*

10. **If humans originated in Africa and migrated to other parts of the world, some time would be required for this to occur. At the modest rate of one kilometer per year, how many centuries would it take for humans originating in Africa to travel to China, some 10,000 Kilometers away?**

    Time = distance/speed

    = 10,000 km/ 1km/yr

    = 10,000 yr

    1 century is 100 years so 10,000 years/100 = *100 centuries*

Acceleration Worksheet

1. **A roller coaster car rapidly picks up speed as it rolls down a slope. As it starts down the slope, its speed is 4 m/s. But 3 seconds later, at the bottom of the slope, its speed is 22 m/s. What is its average acceleration?**

   Change in speed = 22 m/s – 4 m/s

   = 18 m/s

Acceleration = change in speed / time

        = 18 m/s / 3 s

        = *6 m/s^2*

2. **A cyclist accelerates from 0 m/s to 8 m/s in 3 seconds. What is his acceleration? Is this acceleration higher than that of a car which accelerates from 0 to 30 m/s in 8 seconds?**

Cyclist:

 Change in speed = 8 m/s – 0 m/s = 8 m/s

 Acceleration = change in speed / time

        = 8 m/s / 3 s

        = *2.67 m/s^2*

Car:

Change in speed = 30 m/s – 0 m/s = 30 m/s

 Acceleration = change in speed / time

        = 30 m/s / 8 s

        = 3.75 m/s^2

No, the cyclist's acceleration is not higher than that of the car.

3. **A car advertisement states that a certain car can accelerate from rest to 70 km/h in 7 seconds. Find the car's average acceleration.**

      The note at the top of the question page specifies that the answer must be in m/s^2.

      The 70 km/hr will have to be changed to m/s

      1 km = 1,000 m therefore 70 km = 70 x 1,000 = 70,000 m

      1 hr = 60 minutes and each minute is 60 seconds. Therefore to convert the hour to seconds: 1 x 60 x 60 = 3600 seconds

      70 km/hr in meters per second will be 70,000 m/ 3600 s = 19.44 m/s

      Rest means that the object is not moving so the car's speed at rest is 0 m/s

Change in speed = 19.44 m/s – 0 m/s = 19.44 m/s

 Acceleration = change in speed / time

        = 19.44 m/s / 7 s

$$= 2.78 \ m/s^2$$

4. **A lizard accelerates from 2 m/s to 10 m/s in 4 seconds. What is the lizard's average acceleration?**

   Change in speed = 10 m/s – 2 m/s = 8 m/s

   Acceleration = change in speed / time
   $$= 8 \ m/s \ / \ 4 \ s$$
   $$= 2 \ m/s^2$$

5. **If a Ferrari, with an initial velocity of 10 m/s, accelerates at a rate of 50 m/s/s for 3 seconds, what will its final velocity be?**

   Change in speed = Acceleration x time
   $$= 50 \ m/s^2 \ x \ 3 \ s$$
   $$= 150 \ m/s$$

   Change in speed = Final speed – initial speed
   Final speed = Change in speed + initial speed
   $$= 150 \ m/s + 10 \ m/s$$
   $$= 160 \ m/s$$

The pH Scale

Acids are substances that release ___*hydrogen*___ ions into water. Bases are substances that release ___*hydroxide*___ ions into water. An acid's strength is called its ___*acidity*___ and a base's strength is called its ___*alkalinity*___. The strength of an acid or base is measured using the ___*pH*___ scale which ranges from 0 to 14.

Strong acids have a ___*low*___ number on the pH scale, whereas strong bases have a ___*high*___ number on the pH scale. Substances that have an equal number of hydrogen and hydroxide ions are said to be ___*neutral*___ and have a pH of around 7. Pure ___*water*___ is an example of a neutral substance.

To determine the acidity or alkalinity of a substance people can use ___*indicators*___ such as litmus. Litmus turns ___*red*___ in acids and ___*blue*___ in bases. Some flowers such as hydrangeas can even act as indicators for the acidity or alkalinity of the soil in which they are growing. Hydrangeas usually grow blue or purple flowers in acidic soils and red flowers in alkaline soils.