5

speed time distance word problems

2008A   6. A triathlete competes in a triathlon in which the swimming, biking, and running segments are all of the same length. The triathlete swims at a rate of 3 kilometers per hour, bikes at a rate of 20 kilometers per hour, and runs at a rate of 10 kilometers per hour. Which of the following is closest to the triathlete's average speed, in kilometers per hour, for the entire race?

(A) 3   (B) 4   (C) 5   (D) 6   (E) 7

2014A

6. Suppose that a cows give b gallons of milk in c days. At this rate, how many gallons of milk will d cows give in e days?

(A) $\dfrac{bde}{ac}$ (B) $\dfrac{ac}{bde}$ (C) $\dfrac{abde}{c}$ (D) $\dfrac{bcde}{a}$ (E) $\dfrac{abc}{de}$

2005A   7. Josh and Mike live 13 miles apart. Yesterday Josh started to ride his bicycle toward Mike's house. A little later Mike started to ride his bicycle toward Josh's house. When they met, Josh had ridden for twice the length of time as Mike and at four-fifths of Mike's rate. How many miles had Mike ridden when they met?

(A) 4   (B) 5   (C) 6   (D) 7   (E) 8

2010A

7. Crystal has a running course marked out for her daily run. She starts this run by heading due north for one mile. She then runs northeast for one mile, then southeast for one mile. The last portion of her run takes her on a straight line back to where she started. How far, in miles, is this last portion of her run?

(A) 1   (B) $\sqrt{2}$ (C) $\sqrt{3}$ (D) 2   (E) $2\sqrt{2}$

2017A

7. Jerry and Silvia wanted to go from the southwest corner of a square field to the northeast corner. Jerry walked due east and then due north to reach the goal, but Silvia headed northeast and reached the goal walking in a straight line. Which of the following is closest to how much shorter Silvia's trip was, compared to Jerry's trip?

(A) 30%   (B) 40%   (C) 50%   (D) 60%   (E) 70%

2017B

7. Samia set off on her bicycle to visit her friend, traveling at an average speed of 17 kilometers per hour. When she had gone half the distance to her friend's house, a tire went flat, and she walked the rest of the way at 5 kilometers per hour. In all it took her 44 minutes to reach her friend's house. In kilometers rounded to the nearest tenth, how far did Samia walk?

(A) 2.0   (B) 2.2   (C) 2.8   (D) 3.4   (E) 4.4

2013B

8. Ray's car averages 40 miles per gallon of gasoline, and Tom's car averages 10 miles per gallon of gasoline. Ray and Tom each drive the same number of miles. What is the cars' combined rate of miles per gallon of gasoline?

(A) 10   (B) 16   (C) 25   (D) 30   (E) 40

2014B

8. A truck travels $\frac{b}{6}$ feet every t seconds. There are 3 feet in a yard. How many yards does the truck travel in 3 minutes?

(A) $\dfrac{b}{1080t}$ (B) $\dfrac{30t}{b}$ (C) $\dfrac{30b}{t}$ (D) $\dfrac{10t}{b}$ (E) $\dfrac{10b}{t}$

2006B

9. Francesca uses 100 grams of lemon juice, 100 grams of sugar, and 400 grams of water to make lemonade. There are 25 calories in 100 grams of lemon juice and 386 calories in 100 grams of sugar. Water contains no calories. How many calories are in 200 grams of her lemonade?

(A) 129   (B) 137   (C) 174   (D) 223   (E) 411

2017A

9. Minnie rides on a flat road at 20 kilometers per hour (kph), downhill at 30 kph, and uphill at 5 kph. Penny rides on a flat road at 30 kph, downhill at 40 kph, and uphill at 10 kph. Minnie goes from town A to town B, a distance of 10 km all uphill, then from town B to town C, a distance of 15 km all downhill, and then back to town A, a distance of 20 km on the flat. Penny goes the other way around using the same route. How many more minutes does it take Minnie to complete the 45-km ride than it takes Penny?

(A) 45   (B) 60   (C) 65   (D) 90   (E) 95

2010B

10. Shelby drives her scooter at a speed of 30 miles per hour if it is not raining, and 20 miles per hour if it is raining. Today she drove in the sun in the morning and in the rain in the evening, for a total of 16 miles in 40 minutes. How many minutes did she drive in the rain?

(A) 18   (B) 21   (C) 24   (D) 27   (E) 30