UNIT 5 EXERCISES 1-5

SPEED/TIME

2011A

1. A cell phone plan costs \$20 each month, plus 5¢ per text message sent, plus 10¢ for each minute used over 30 hours. In January Michelle sent 100 text messages and talked for 30.5 hours. How much did she have to pay?

(A) \$24.00 **(B)** \$24.50 **(C)** \$25.50 **(D)** \$28.00 **(E)** \$30.00

2017B

1. Kymbrea's comic book collection currently has 30 comic books in it, and she is adding to her collection at the rate of 2 comic books per month. LaShawn's collection currently has 10 comic books in it, and he is adding to his collection at the rate of 6 comic books per month. After how many months will LaShawn's collection have twice as many comic books as Kymbrea's?

(A) 1 **(B)** 4 **(C)** 5 **(D)** 20 **(E)** 25

2007B

2. A college student drove his compact car 120 miles home for the weekend and averaged 30 miles per gallon. On the return trip the student drove his parents' SUV and averaged only 20 miles per gallon. What was the average gas mileage, in miles per gallon, for the round trip?

(A) 22 **(B)** 24 **(C)** 25 **(D)** 26 **(E)** 28

2009B 2. Paula the painter had just enough paint for 30 identically sized rooms. Unfortunately, on the way to work, three cans of paint fell off her truck, so she had only enough paint for 25 rooms. How many cans of paint did she use for the 25 rooms?

(A) 10 **(B)** 12 **(C)** 15 **(D)** 18 **(E)** 25

2012A 2. Cagney can frost a cupcake every 20 seconds and Lacey can frost a cupcake every 30 seconds. Working together, how many cupcakes can they frost in 5 minutes?

(A) 10 **(B)** 15 **(C)** 20 **(D)** 25 **(E)** 30

2018B 2. Sam drove 96 miles in 90 minutes. His average speed during the first 30 minutes was 60 mph (miles per hour), and his average speed during the second 30 minutes was 65 mph. What was his average speed, in mph, during the last 30 minutes?

(A) 64 **(B)** 65 **(C)** 66 **(D)** 67 **(E)** 68

2014B 3. Randy drove the first third of his trip on a gravel road, the next 20 miles on pavement, and the remaining one-fifth on a dirt road. In miles, how long was Randy's trip?

(A) 30 **(B)** $\frac{400}{11}$ **(C)** $\frac{75}{2}$ **(D)** 40 **(E)** $\frac{300}{7}$

2003A 4. It takes Mary 30 minutes to walk uphill 1 km from her home to school, but it takes her only 10 minutes to walk from school to home along the same route. What is her average speed, in km/hr, for the round trip?

(A) 3 **(B)** 3.125 **(C)** 3.5 **(D)** 4 **(E)** 4.5

2007A 4. Kate rode her bicycle for 30 minutes at a speed of 16 mph, then walked for 90 minutes at a speed of 4 mph. What was her overall average speed in miles per hour?

(A) 7 **(B)** 9 **(C)** 10 **(D)** 12 **(E)** 14

2014A 4. 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) $\frac{bde}{ac}$ **(B)** $\frac{ac}{bde}$ **(C)** $\frac{abde}{c}$ **(D)** $\frac{bcde}{a}$ **(E)** $\frac{abc}{de}$

2017B 4. 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

2006B 5. John is walking east at a speed of 3 miles per hour, while Bob is also walking east, but at a speed of 5 miles per hour. If Bob is now 1 mile west of John, how many minutes will it take for Bob to catch up to John?

(A) 30 **(B)** 50 **(C)** 60 **(D)** 90 **(E)** 120