

**A.A.6: Speed: Analyze and solve verbal problems whose solution requires solving a linear equation in one variable or linear inequality in one variable**

- 1 A girl can ski down a hill five times as fast as she can climb up the same hill. If she can climb up the hill and ski down in a total of 9 minutes, how many minutes does it take her to climb up the hill?
  - 1) 1.8
  - 2) 4.5
  - 3) 7.2
  - 4) 7.5
- 2 A bicyclist leaves Bay Shore traveling at an average speed of 12 miles per hour. Three hours later, a car leaves Bay Shore, on the same route, traveling at an average speed of 30 miles per hour. How many hours after the car leaves Bay Shore will the car catch up to the cyclist?
  - 1) 8
  - 2) 2
  - 3) 5
  - 4) 4
- 3 A truck traveling at a constant rate of 45 miles per hour leaves Albany. One hour later a car traveling at a constant rate of 60 miles per hour also leaves Albany traveling in the same direction on the same highway. How long will it take for the car to catch up to the truck, if both vehicles continue in the same direction on the highway?
- 4 Two trains leave the same station at the same time and travel in opposite directions. One train travels at 80 kilometers per hour and the other at 100 kilometers per hour. In how many hours will they be 900 kilometers apart?
- 5 A who travels 4 miles an hour, starts from a certain place two hours in advance of  $B$  who travels 5 miles an hour in the same direction. How many hours must  $B$  travel to overtake  $A$ ?
- 6 It took a man 12 hours to make a certain journey. Had he traveled 1 mile an hour faster he would have required 2 hours less time. What was his rate an hour and how long was the journey?

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**Answer Section**

1 ANS: 4

$$5D + D = 9$$

$$U + D = 9 \quad 6D = 9$$

$$U = 5D \quad D = 1.5$$

$$U = 7.5$$

PTS: 2

REF: 080019a

2 ANS: 2

bicycle's distance = car's distance

$$12(t + 3) = 30t$$

$$12t + 36 = 30t$$

$$36 = 18t$$

$$t = 2$$

PTS: 2

REF: 080518a

3 ANS:

truck's distance = car's distance

$$45(t + 1) = 60t$$

3.  $45t + 45 = 60t$

$$45 = 15t$$

$$t = 3$$

PTS: 3

REF: 010027a

4 ANS:

5. Since the trains are traveling in opposite directions, you add the distances they have traveled to find their

speed  $\times$  time = distance

$$80t + 100t = 900$$

distance apart.

$$180t = 900$$

$$t = 5$$

PTS: 2

REF: 010125a

5 ANS:

8

PTS: 12

REF: 090405a1

6 ANS:

5 and 60 miles

PTS: 20

REF: 039512a1