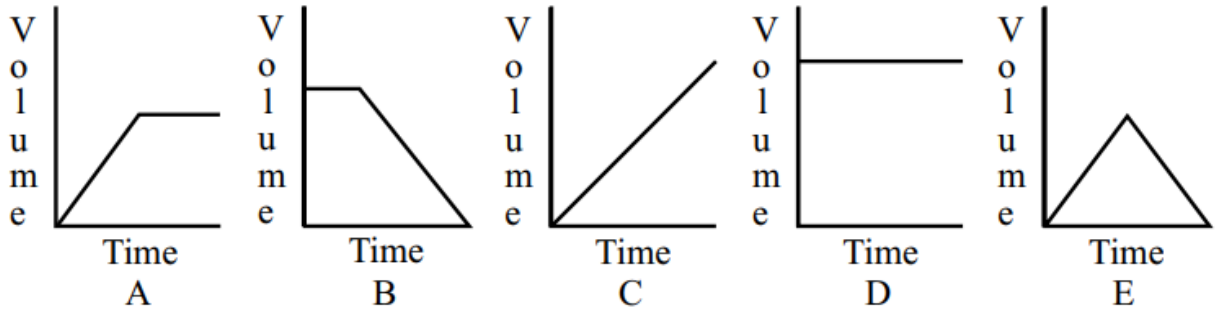
2002 Q6

6. A birdbath is designed to overflow so that it will be self-cleaning. Water flows in at the rate of 20 milliliters per minute and drains at the rate of 18 milliliters per minute. One of these graphs shows the volume of water in the birdbath during the filling time and continuing into the overflow time. Which one is it?

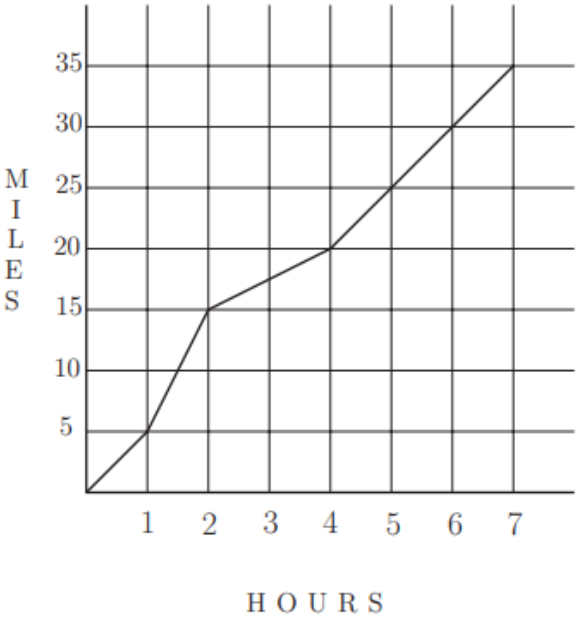


(A) A **(B)** B **(C)** C **(D)** D **(E)** E

6. **(A)** Initially, volume increases with time as shown by graphs A, C, and E. But once the birdbath is full, the volume remains constant as the birdbath overflows. Only graph A shows both features.

2011 Q9

9. Carmen takes a long bike ride on a hilly highway. The graph indicates the miles traveled during the time of her ride. What is Carmen's average speed for her entire ride in miles per hour?



(A) 2 **(B)** 2.5 **(C)** 4 **(D)** 4.5 **(E)** 5

9. **Answer (E):** Carmen covers 35 miles in 7 hours, making her average speed $\frac{35}{7} = 5$ mph.

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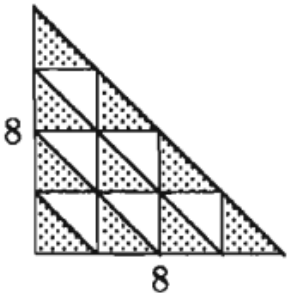
1992 Q10

10. An isosceles right triangle with legs of length 8 is partitioned into 16 congruent triangles as shown. The shaded area is

(A) 10 **(B)** 20 **(C)** 32 **(D)** 40 **(E)** 64



10. **(B)** The area of each of the small shaded triangles is $\frac{1}{2} \times 2 \times 2 = 2$. There are ten of these, so the shaded area is $2 \times 10 = 20$.

OR

The area of the large triangle is $\frac{1}{2} \times 8 \times 8 = 32$. Only 10 of the 16 small triangles are shaded. Thus the shaded area is $\frac{10}{16}$ of 32, or 20.