

## Numbers and Operations

1. Aubrey can run at a pace of 6 miles per hour. Running at the same rate, how many miles can she run in 90 minutes?

(A) 4  
(B) 6  
(C) 8  
(D) 9  
(E) 12

2. Which of the following is a factor of  $15 + 45$ ?

(A) 18  
(B) 25  
(C) 30  
(D) 35  
(E) 45

3. Which of the following is NOT a positive multiple of  $9 + 3$ ?

(A) 3  
(B) 12  
(C) 24  
(D) 48  
(E) 60

$x, 2x, 4x, \dots$

4. The first term in the sequence above is  $x$ , and each term thereafter is equal to twice the previous term. Which of the following is the sum of the first five terms of this sequence?

(A)  $10x$   
(B)  $15x$   
(C)  $30x$   
(D)  $31x$   
(E)  $32x$

5. A number is divided by four. The result is divided by three, for a final result of two. What was the original number?

(A) 6  
(B) 12  
(C) 18  
(D) 24  
(E) 36

6. A farmer can pick 12 cabbages in 1 hour. Working at the same rate, how long in hours would it take two farmers to pick 48 cabbages?

(A) 1  
(B) 2  
(C) 4  
(D) 6  
(E) 8

$abcdeabcdeabc\dots$

7. In the sequence of letters shown above, the first letter is  $a$ , followed by  $b$ ,  $c$ ,  $d$ , and  $e$ , at which point the pattern repeats. Which of the following is the 31<sup>st</sup> letter in this sequence?

(A)  $a$   
(B)  $b$   
(C)  $c$   
(D)  $d$   
(E)  $e$

8. The month of July has 31 days. What is the greatest possible number of Saturdays that can occur in July?

9. Bill is 27 years older than Ted, who is 38 years younger than Amy. In how many years will Bill be the same age as Amy is now?

10. Aubrey can walk 3000 feet in 10 minutes. Walking at the same rate, how many feet can she walk in 10 seconds?

All cabbages are red.

11. Which of the following statements shows that the statement above is FALSE?

- (A) David is eating a red apple.
- (B) Bill is eating a green apple.
- (C) Alice is not eating a red cabbage.
- (D) Ted is eating a red cabbage.
- (E) Keisha is eating a green cabbage.

12. When a particular number is added to its own reciprocal, the resulting sum is  $-2$ . The number is which of the following?

(A)  $-2$

(B)  $-1$

(C)  $-\frac{1}{2}$

(D)  $1$

(E)  $2$

13. Two consecutive integers  $m$  and  $n$  are prime numbers. Which of the following is equal to  $mn$ ?

(A)  $1$

(B)  $2$

(C)  $6$

(D)  $9$

(E)  $15$