**Topic**: Inverse operations

**Question**: Choose the pair of equations that represents inverse operations.

**Answer choices**:

A        $3 \cdot 2 = 6$ and $2 \cdot 3 = 6$

B        $3 + 2 = 5$ and $5 + 3 = 8$

C        $1 + 3 = 4$ and $4 + 3 = 7$

D        $1 + 3 = 4$ and $4 - 3 = 1$

**Solution**: D

Addition and subtraction are inverse operations of each other, and multiplication and division are inverse operations of each other. The only two equations that show addition and subtraction, or multiplication and division, are the equations in answer choice D.

Inverse operations always let us get back to our starting point. In this case, the first equation in answer choice D starts at $1$, then we add $3$ to it, and we get to $4$. In the second equation, we start at the result of the first equation, $4$, then we subtract $3$ back out, and we get back to the starting point, $1$. This proves that the addition in the first equation and the subtraction in the second equation are inverse operations.

**Topic**: Inverse operations

**Question**: Choose the pair of equations that represents inverse operations.

**Answer choices**:

A      $4 \cdot 3 = 12$ and $3 \cdot 4 = 12$

B      $4 + 3 = 7$ and $3 + 4 = 7$

C      $1 + 3 = 4$ and $4 + 3 = 7$

D      $4 + 3 = 7$ and $7 - 3 = 4$

**Solution**: D

Addition and subtraction are inverse operations of each other, and multiplication and division are inverse operations of each other. The only two equations that show addition and subtraction, or multiplication and division, are the equations in answer choice D.

Inverse operations always let us get back to our starting point. In this case, the first equation in answer choice D starts at $4$, then we add $3$ to it, and we get to $7$. In the second equation, we start at the result of the first equation, $7$, then we subtract $3$ back out, and we get back to the starting point, $4$. This proves that the addition in the first equation and the subtraction in the second equation are inverse operations.

**Topic**: Inverse operations

**Question**: Each choice below shows an equation before a change is made and then after the change is made. Three of them are wrong. Which one correctly shows the result of an inverse operation?

**Answer choices**:

A      If $7 + 3 = 10$ then $7 = 10/3$

B      If $-8 + 6 = -2$ then $-8 = -2 + 6$

C      If $4 \cdot 5 = 20$ then $5 = 20/4$

D      If $26/2 = 13$ then $26 = 13 - 2$

**Solution**: C

For answer choice A, the inverse of $+3$ is $-3$, so a correct answer would have been,

If $7 + 3 = 10$ then $7 = 10 - 3$

For answer choice B, the inverse of $+6$ is $-6$, so a correct answer would have been,

If $-8 + 6 = -2$ then $-8 = -2 - 6$

For answer choice C, the inverse of multiplying by $4$ is dividing by $4$, and that's exactly what's been done, so answer choice C is the correct answer.

If $4 \cdot 5 = 20$ then $5 = 20/4$

For answer choice D, the inverse of dividing by $2$ is multiplying by $2$, so a correct answer would have been,

If $26/2 = 13$ then $26 = 13 \cdot 2$