**Topic**: Consecutive integers

**Question**: Choose the group of consecutive integers.

**Answer choices**:

A $3, 5, 7$

B $-3, -2, -1$

C $2, 4, 6$

D $5, 10, 15$

**Solution**: B

Consecutive integers are positive or negative whole numbers that are one unit apart from each other.

**Topic**: Consecutive integers

**Question**: Find two consecutive integers that sum to 45.

**Answer choices**:

A 22, 23

B 21, 24

C 20, 25

D 19, 26

**Solution**: A

Consecutive integers are positive or negative whole numbers that are one unit apart from each other.

Which means two consecutive integers can be given by $x$ and $x + 1$. Therefore, we can set up the equation.

$$x + (x + 1) = 45$$

$$x + x + 1 = 45$$

$$2x + 1 = 45$$

Use inverse operations to solve for the smaller of the consecutive integers.

$$2x + 1 - 1 = 45 - 1$$

$$2x = 44$$

$$\frac{2x}{2} = \frac{44}{2}$$

$$x = 22$$

With $x = 22$, we know $x + 1$ is $22 + 1 = 23$. So the two consecutive integers are $22$ and $23$. To double-check, $22 + 23 = 45$.

**Topic**: Consecutive integers

**Question**: In a string of three consecutive integers, the sum of the first two integers is $10$ more than the third integer. What is the third integer?

**Answer choices**:

A $11$

B $13$

C $15$

D $17$

**Solution**: B

Because the integers are consecutive, it means they are three numbers like $3, 4, 5$ or $7, 8, 9$. Therefore, each integer is one more than the last which means we could represent the three integers as

First integer $x$

Second integer $x + 1$

Third integer $x + 2$

The "sum of the first two integers" is,

$$x + (x + 1)$$

$$2x + 1$$

and "$10$ more than the third integer" is

$$(x + 2) + 10$$

$$x + 12$$

We've been told that those two quantities are equivalent, so we'll set them equal to one another, and then use inverse operations to solve for $x$, the first integer.

$$2x + 1 = x + 12$$

$$2x - x + 1 = x - x + 12$$

$$x + 1 = 12$$



$$x + 1 - 1 = 12 - 1$$

$$x = 11$$

The three integers are therefore

| | |
|---|---|
| First integer | $x = 11$ |
| Second integer | $x + 1 = 11 + 1 = 12$ |
| Third integer | $x + 2 = 11 + 2 = 13$ |

We were asked for the third integer, and the third integer is $13$.