Topic: Powers of negative bases

Question: Simplify the expression.

$$-3^2$$

Answer choices:

A   9

B   6

C -6

D -9

Solution: D

By PEMDAS and the and order of operations, we have to take care of the exponent first, and then multiply by the negative sign (which is actually a -1).

$$-3^2$$

$$-(3 \cdot 3)$$

$$-(9)$$

$$-9$$

We have to remember that -3^2 is different than $(-3)^2$.

Topic: Powers of negative bases

Question: Simplify the expression.

$$-1^2 \cdot (-3)^3$$

Answer choices:

A   3

B   27

C -1

D -9

Solution: B

By PEMDAS and the order of operations, we have to take care of the exponent first, and then multiply by the negative sign (which is actually a -1).

$$-1^2$$

$$-(1 \cdot 1)$$

$$-(1)$$

$$-1$$

When we have $(-3)^3$, the negative sign is included inside the parentheses, and the exponent tells us to raise the -3 inside the parentheses to the power of 3.

$$(-3)^3$$

$$(-3)(-3)(-3)$$

$$-27$$

Therefore we get

$$-1^2 \cdot (-3)^3$$

$$(-1)(-27)$$

$$27$$

Topic: Powers of negative bases

Question: Simplify the expression.

$$(-7)^2$$

Answer choices:

A -49

B 0

C -14

D 49

Solution: D

When we have $(-7)^2$, the negative sign is included inside the parentheses, and the exponent tells us to raise the -7 inside the parentheses to the power of 2. So $(-7)^2$ is the multiplication in which -7 appears as a factor twice (and there are no other factors).

$$(-7)^2$$

$$(-7)(-7)$$

$$49$$