Topic: Exponents

Question: Find the value of the expression.

3^4

Answer choices:

A 12

B 81

C 27

D 243

Solution: B

The expression 3^4 means that the base 3 needs to be multiplied by itself 4 times.

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

$$(9)(3)(3)$$

$$(27)(3)$$

$$81$$

Topic: Exponents

Question: Use exponents to simplify the expression.

$$2 \cdot 2 \cdot 2 \cdot 7 \cdot 7 \cdot 7 \cdot 7 \cdot 7$$

Answer choices:

A $2^3 \cdot 7^5$

B $14^3 \cdot 7^5$

C $4^2 \cdot 7^5$

D $2^3 \cdot 7^4$

Solution: A

In the given expression,

$$2 \cdot 2 \cdot 2 \cdot 7 \cdot 7 \cdot 7 \cdot 7 \cdot 7$$

we see that 2 appears as a factor 3 times, so we can write that part in exponential form as 2^3. Also, 7 appears as a factor 5 times, which we can write as 7^5. Combining these results, we get

$$2^3 \cdot 7^5$$

Topic: Exponents

Question: Find the difference.

$$8^2 - 3^3$$

Answer choices:

A 5

B 37

C 4

D 11

Solution: B

In order to find the difference, we need to simplify each term separately.

$$8^2 - 3^3$$

$$64 - 27$$

$$37$$