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Number And Operations Practice Quiz- Answer Key

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1) $\sqrt{40}$ is between which two whole numbers?

Answer: **C**

Explanation: $6 \cdot 6$ is 36 and $7 \cdot 7$ is 49 so 40 falls between **6 and 7**

2)

$$\sqrt{324}$$

Simplify.

Answer: **B**

Explanation: *The solution is 18. Since $18 \times 18 = 324$, we know that 18 is the solution.*

3) A city has two water towers. One tower holds 7.35×10^5 gallons of water and the other tower holds 9.78×10^5 gallons of water. What is the combined water capacity of the two towers?

Answer: **A**

Explanation: *The solution is 1.713×10^6 . Begin by adding the bases. The result is 17.13×10^5 . However, the base must be greater than 1 but less than 10, so we must move the decimal 1 place to the left. This increases the exponent from 5 to 6.*

4) Identify the product and express it in scientific notation.

$$4.7 \times (6.02 \times 10^{23})$$

Answer: **B**

Explanation: *The correct answer is 2.83×10^{24} . When you do the multiplication, you do get 28.3×10^{23} . To convert this to standard, move the decimal to the left by one, and, therefore, make the exponent bigger by a factor of 10.*

5) Write 4^5 in expanded form.

Answer: **D**

Explanation: *Solution: $4 \cdot 4 \cdot 4 \cdot 4 \cdot 4$ Expanded form is writing out the multiplication problem, an exponent represents a number multiplied by itself.*

6) Find the difference and express the answer in scientific notation.

$$452.7 \times 10^3 - 2.7 \times 10^5$$

Answer: **B**

Explanation: *The correct answer here is 1.82×10^5 . To do any subtraction, make sure that the exponents are the same. Modify the first term to be $4.527 \times 10^5 - 2.7 \times 10^5$ which equals 1.82×10^5 .*

7) Simplify.

$$10^2 \cdot 10^4$$

Answer: **C**

Explanation: *The correct answer is 10^6 . When the bases are the same you add the exponents. So you have $2 + 4$ which is 6 for the exponent of the base 10.*

8) What is another way to express 16?

Answer: **A**

Explanation: *16 can also be expressed as 4^2 . $4 \times 4 = 16$.*

9) $(3^2)(3^3)$

Answer: **C**

Explanation: *The solution is **243**. $(3^2)(3^3) = 3^5 = 243$.*

10)

$$\sqrt{100} - \sqrt{9}$$

Simplify.

Answer: **A**

Explanation: *The correct answer is **7**. You would find the square root of 100 which is 10 and the square root of 9 which is 3 and then subtract $10 - 3$ to get 7.*

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