

Worksheet: Powers and Exponents



Q1: Find the value of $(-3)^3 \times (3^2)^3$.

A -6,561

B 6,561

C 19,683

D -19,683



Question Video

Q2: Calculate $\frac{\left(\frac{1}{2}\right)^7 \times \left(\frac{1}{2}\right)^2}{\left(\frac{1}{2}\right)^3}$, giving your answer in its simplest form.

A $\frac{1}{256}$

B $\frac{1}{64}$

C 64

D 256



Question Video

Q3: Find the value of 5^2 .

- A 5
- B 25
- C 16
- D 125



Question Video

Q4: What terminology do we use to describe the 3 in the term x^3 ?

- A a factor
- B a coefficient
- C a base
- D an expression
- E an exponent

Q5: Is the following correct: $6^3 = 2 \times 2 \times 2 \times 3 \times 3 \times 3$?

- A yes
- B no

Q6: Evaluate 5^1 .

A 10

B 25

C 1

D 6

E 5

Q7: Calculate $2^7 \times 2^4 \times 3^2 \times 3^3$.

A 497,664

B 6^{16}

C 82,944

D 36

Q8: Simplify $-\frac{12x^6y^5}{6x^4y}$.

A -2

B $-2x^{10}y^6$

C $-2x^6y^5$

D $-2x^2y^4$

Q9: Write four squared using digits.

- A 3^4
- B 4^2
- C 4^3
- D 2^4

Q10: Write the expression 3^4 in words.

- A Four to the fourth power
- B Three to the fifth power
- C Four to the Three power
- D Three to the fourth power

Q11: What is the base in 5^7 ?

- A 7
- B 5

Q12: Is the following correct: $3^4 = 3 + 3 + 3 + 3$?

- A yes
- B no

Q13: Write seven to the fourth power using digits.

- A 4^7
- B 7^4
- C 7^5
- D 5^7

Q14: The cost of each flight of the space shuttle is about \$10 000 000. Write this cost in exponential form.

- A 100^5 dollars
- B 10^6 dollars
- C 10^7 dollars
- D 100^6 dollars
- E 10^8 dollars

Q15: The African bush elephant is the largest land animal and weighs about 8 tons. Express this amount in exponential form.

- A 2^4 tons
- B 2^3 tons
- C 2^6 tons
- D 3^2 tons
- E 4^2 tons

Q16: Express the volume of a cube of edge length 5 units as an exponent, and then determine its value.

A 5^3 , 15 cubic units

B 5^3 , 125 cubic units

C 3^5 , 125 cubic units

D 2^5 , 32 cubic units

E 5^2 , 25 cubic units

Q17: The prefix kilo in kilometre represents 1 000 metres. Write this length as a power of ten.

A 10^8 metres

B 10^{12} metres

C 10^6 metres

D 10^9 metres

E 10^3 metres

Q18: The prefix mega in megameter represents 1 000 000 meters. Write this number as a power of ten.

- A 10^3
- B 10^6
- C 10^{12}
- D 10^9
- E 10^8

Q19: Find the digit in the units place of $5^4 \times 2^6$.

- A 25
- B 5
- C 0
- D 2
- E 4

Q20: Use a calculator to determine whether this sentence is true or false:

$$2^4 < 4^2.$$

- A true
- B false

Q21: Complete the following using $<$, $>$, or $=$: $3^3 \underline{\hspace{1cm}} 3^5$.

A =

B $>$

C $<$

Q22: Complete the following using $<$, $>$, or $=$: $8^2 \underline{\hspace{1cm}} 2^6$.

A $>$

B $<$

C =

Q23: Which of the following is true?

A $5^3 = 125$

B $5^3 < 125$

C $5^3 > 125$

Q24: Complete the following using $<$, $>$, or $=$: $4^5 \underline{\hspace{1cm}} 3^5$.

A =

B $<$

C $>$

Q25: Complete the following using $<$, $>$, or $=$: 4^3 6^2 .

A $>$

B $<$

C $=$