

MATH 9 - CHAPTER 3 - PRETEST

parent/guardian signature

Multiple Choice - PART 1 - NON-CALCULATOR - 10 MINUTES

Circle the choice that best completes the statement or answers the question.

1. Which of the following repeated multiplication forms represents the area of a square with a side length of 2?
 - a. 2×4
 - b. 2×2
 - c. $2 \times 2 \times 2 \times 2$
 - d. $2 \times 2 \times 2 \times 4$

2. Which of the following represents $1 \times 1 \times 1 \times 1$ in exponential form?
 - a. 1
 - b. 1^4
 - c. 4
 - d. 4^1

3. In the expression 7^4 , what does the number 4 represent?
 - a. base
 - b. exponent
 - c. multiple
 - d. power

4. What is the value of $\frac{(-5)^6}{(-5)^3}$?
 - a. -5
 - b. -25
 - c. -125
 - d. -625

5. Simplify $(3^2)^{-3}$.
 - a. -3^6
 - b. $\frac{1}{3^6}$
 - c. $\frac{1}{3^6}$
 - d. 3^6

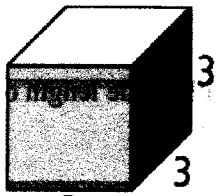
6. Evaluate $\left(\frac{2}{3}\right)^3 \times \left(\frac{2}{3}\right)^2$.
 - a. $\frac{4}{9}$
 - b. $\frac{8}{27}$
 - c. $\frac{32}{243}$
 - d. $\frac{1024}{59049}$

Multiple Choice - PART 2 - CALCULATOR may be used after 10 minutes

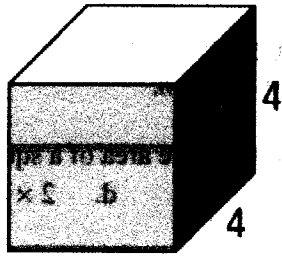
7. Express 2187 as a power of 3.
 - a. 3×729
 - b. 3^7
 - c. 7^3
 - d. 729^3

8. Which power has the greatest value? -32^2 , 4^6 , $(-5)^4$, 2^{10}
 - a. 2^{10}
 - b. 4^6
 - c. $(-5)^4$
 - d. -32^2

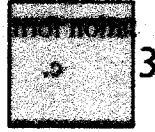
9. Which diagram represents the power 3^{2^2} ?



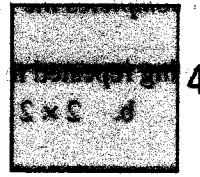
a.



b.



c.



d.

10. Express $7^2 \times 7^6$ as a single power.

a. 7^2

b. 7^4

c. 7^8

d. 7^{12}

11. Evaluate 7^0 .

a. 0

b. 1

c. 7

d. 70

12. What is $(8^2 - 2^4) \div 2^3 - 4$?

a. 0

c. 12

b. 2

d. 24

13. What is the value of $\frac{4^3 + 2^4}{2^3 \times 5}$?

a. 50

c. 2

b. 10

d. 1

14. If a colony of 1000 bacteria doubles in size every 2 h, what is the size of the colony after 6 h?

a. 2000

c. 8000

b. 6000

d. 64 000

Short Answer - Show your work.

15. Write each expression as a power.

a) $9 \times 9 \times 9 \times 9$

c) $-1 \times -1 \times -1$

b) $4 \times 4 \times 4 \times 4 \times 4$

d) $6 \times 6 \times 6 \times 6 \times 6 \times 6$

16. Write each power as repeated multiplication, and evaluate.

a) 7^4

c) 12^3

b) 11^3

d) 5^5

17. Evaluate. Show your work

a) $10 \times 4 + 6^3$

c) $8^2 \div 4 + 2^2$

b) $5 \times 2^5 - 6^2 \times 2$

d) $2 \times 5^3 \div (35 - 5^2)$

Problem - Show your work.

18. The number of insects in a colony doubles every month. There are currently 1000 insects in the colony. How many insects will there be after one year?

work

answer

19. Very large numbers, such as the mass of a planet, can be expressed as the nearest power of 10. This is known as the order of magnitude. To the nearest order of magnitude, the mass of Earth is 10^{25} kg and the mass of the Sun is 10^{30} kg. How many times greater is the mass of the Sun than the mass of Earth?

work

answer