Number 2

Name:_____

5. If $n = 2$, then which of the following expressions yields the largest result?

A. $\frac{n^5 \times n^2}{n^4}$ $\frac{n^7}{n^4} = n^3$

B. $\frac{n^2 \times n^3}{n}$ $\frac{n^5}{n} = n^4$

C. $\frac{(n^2)^3}{n}$ $\frac{n^6}{n} = n^5$

D. $\frac{(n^5)^2}{n^4}$ $\frac{n^{10}}{n^4} = n^6 = 2^6 = 64$

7. Which one of the following statements is correct?

A. $4^5 + 4^7 = 4^{12}$

B. $4^{12} - 4^4 = 4^8$

C. $4^2 \times 4^5 = 4^7$ $2+5=7$ ✓

D. $4^6 \div 4^3 = 4^2$ $6-3 \neq 2$

14. The expression $(3^2 \times 2)^3$ can be simplified to

A. $3^2 \times 2^3$ $3^{2\cdot3} \times 2^3$

B. $3^6 \times 2$ $3^6 \times 2^3$

C. $3^5 \times 2^3$

D. $3^6 \times 2^3$

14. Which of the following expressions represents the addition of 7^2 and 7^3?

A. $(7 + 7)^{2+3}$

B. $(7 + 7)^{2\times3}$

C. $(7 \times 7) + (7 \times 7 \times 7)$

D. $(7 + 7) \times (7 + 7 + 7)$

$7^2 + 7^3$

$7\cdot7 + 7\cdot7\cdot7$

Use the following information to answer question 20.

The expression $\left(\frac{(n^3)^4}{n^2}\right)(n^{10} \div n^5 \times n^2)$ can be simplified to the form n^p.

20. The value of p is

$\left(\frac{n^{12}}{n^2}\right)\left(n^{10-5+2}\right)$

A. 20

B. 17

C. 14

D. 13

$(n^{10})(n^7) = n^{17}$

Numerical Response

3. If $(x^3)^2 \div x^4 = 144$, then what is the whole number value of x?

Answer: 12

(Record your answer in the numerical-response section on the answer sheet.)

$x^6 \div x^4 = 144$

$x^2 = 144$

$x = \sqrt{144} = 12$

Number 2

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When simplified, the expression $\left[(a^2b)(a^3b^2)\right]^3$ can be written in the form $a^m b^n$.

37. Which of the following rows correctly identifies the values of m and n?

Row	m	n
A.	8	6
B.	9	5
C.	15	9
D.	18	6

$(a^2b)^3(a^3b^2)^3$

$a^6b^3a^9b^6$

$a^{15}b^9$

An incorrect simplification of the expression $(2^3)(2^5)^2 \div (4 \times 2)^2$ is shown below.

	$(2^3)(2^5)^2 \div (4 \times 2)^2$
Step 1	$(2^3)(2^5)^2 \div (8)^2$
Step 2	$(2^3)(2^5) \div (8)^2$
Step 3	$(2^3)(2^7) \div (2^3)^2$
Step 4	$(2^3)(2^7) \div (2^6)$
Step 5	$2^{10} \div 2^5$
Step 6	2^2

$5 \cdot 2 = 10$

$3 \cdot 2 = 6$

Numerical Response

8. In which step is the **first** recorded error?

Answer: Step 2

(Record your answer in the numerical-response section on the answer sheet.)

1. Another representation of the expression $\left(\frac{2}{3}\right)^4$ is

$\left(\frac{2}{3}\right)\left(\frac{2}{3}\right)\left(\frac{2}{3}\right)\left(\frac{2}{3}\right)$

$\frac{2 \cdot 2 \cdot 2 \cdot 2}{3 \cdot 3 \cdot 3 \cdot 3}$

A. $\frac{2+4}{3+4}$

B. $\frac{2 \times 4}{3 \times 4}$

C. $\frac{2+2+2+2}{3+3+3+3}$

D. $\frac{2 \times 2 \times 2 \times 2}{3 \times 3 \times 3 \times 3}$

Number 2

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Use the following information to answer question 4.

$(3^4)^2$	$\frac{3^{12}}{3^4}$	$3^5 + 3^3$	$[(3^{10})^0]^2$	$\frac{(3 \times 2)^6}{2^6}$	$3^8 - 3^4$
3^8	3^8	270	0	$\frac{3^6 \cdot 2^6}{2^6}$	6480

4. How many of the expressions shown above have a value that is larger than 3^7?

$3^7 = 2187$

A. 2
B. 3
C. 4
D. 5

Use the following information to answer question 30.

Expression 1	$(2^2)^3 + 2^2$	$2^6 + 2^2 = 68$ low
Expression 2	$4^2 + 4^3 - (4^3)^0$	$80 - 0 = 80$ high
Expression 3	$3^4 - 3^2$	$81 - 9 = 72$

30. Which of the following rows correctly identifies the expression with the lowest value and the expression with the highest value?

Row	Lowest Value	Highest Value
A.	Expression 1	Expression 3
B.	Expression 1	Expression 2
C.	Expression 3	Expression 2
D.	Expression 3	Expression 1