

Grade 6 - Exponents and Order of Operations - Test Answer Key

Common Core 6.EE.A.1, 6.EE.A.2c · maths-pdf.fr/en/

Use this key to score the exponents test out of 20 points. Each solution is fully worked, and the scoring line explains how to award each point and partial credit for correct steps.

Grade 6 · Common Core State Standards: **6.EE.A.1, 6.EE.A.2c**

Question 1 - Write and evaluate powers [2 pts]

(a) 7^3 . (b) $2^6 = 64$.

Scoring: 1 point for each part.

Question 2 - Evaluate powers [2 pts]

(a) $5 \times 5 \times 5 = 125$.

(b) $\frac{2}{3} \times \frac{2}{3} = \frac{4}{9}$.

Scoring: 1 point for each part.

Question 3 - Order of operations [2 pts]

Multiply first: $4 \times 3 = 12$.

$30 - 12 + 2 = 20$

Scoring: 1 point for multiplying first; 1 point for 20.

Question 4 - Exponents in order of operations [2 pts]

$3^2 = 9$, $2 \times 9 = 18$, $8 \div 4 = 2$.

$18 + 2 = 20$

Scoring: 1 point for the exponent and products; 1 point for 20.

Question 5 - Parentheses [2 pts]

$$9-3=6, 6^2=36.$$

$$36 \div 4 = 9$$

Scoring: 1 point for the parentheses and exponent; 1 point for 9.

Question 6 - Substitution [2 pts]

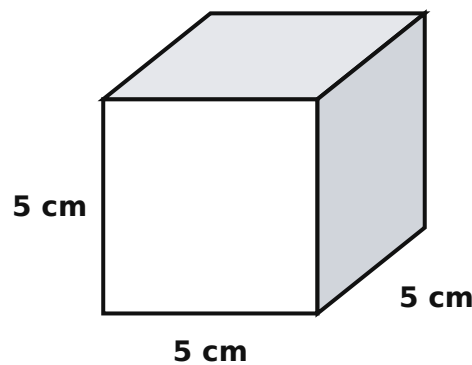
$$4 \times 3^2 - 7 = 4 \times 9 - 7 = 36 - 7 = 29$$

Scoring: 1 point for substituting and using the exponent first; 1 point for 29.

Question 7 - Cube volume [2 pts]

$$V = 5^3 = 5 \times 5 \times 5 = 125.$$

The volume is 125 cm³.



$$5 \times 5 \times 5 = 125 \text{ cubic centimeters.}$$

Scoring: 1 point for the substitution; 1 point for 125 cm³.

Question 8 - Formula [3 pts]

$$15 + 4 \times 2 = 23, 15 + 4 \times 5 = 35, 15 + 4 \times 8 = 47.$$

Hours (h)	2	5	8
Cost	\$23	\$35	\$47

Completed table.

Scoring: 1 point for each correct cost.

Question 9 - Multi-step expression [3 pts]

Exponent: $2^3 = 8$. Multiply: $3 \times 8 = 24$. Add: $5 + 24 = 29$.

Maya added $5 + 3 = 8$ first and then did $8 \times 8 = 64$, ignoring the order of operations.

Scoring: 1 point for the correct value 29; 1 point for the correct steps; 1 point for identifying the mistake.

Total
20 points