MSTAR PRACTICE WORKSHEET

Lesson 6-4: Write and Evaluate Numerical Expressions with Exponents

Grade 6 Mathematics · Standard 6.AT.6c

Name: _____ Date: _____

These are MSTAR-style questions written for this curriculum to rehearse the format. They are not official Maryland assessment items. MSTAR — Maryland's new state test, first given in spring 2027 — uses the same kinds of questions you see here: selected response, select-all, two-part evidence questions, and written responses.

Part A — Skills Check

Warm up with the lesson's core skills — one best answer each.

Question 1 SELECTED RESPONSE · 1 POINT

Evaluate $3 + 4 \times 2$.

(A) 9

(B) 11

(C) 14

(D) 24

Question 2 SELECTED RESPONSE · 1 POINT

What does 2^3 mean?

(A) $2 \times 2 \times 2$

(B) 2×3

(C) $2 + 2 + 2$

(D) 3×3

Question 3 SELECTED RESPONSE · 1 POINT

Sofia buys 4 tickets at $20 each and 2 tickets at $15 each. Which expression shows the total?

(A) $4 \times 20 + 2 \times 15$

(B) $4 + 20 + 2 + 15$

(C) $(4 + 2) \times (20 + 15)$

(D) $4 \times 2 + 20 \times 15$

Question 4 SELECTED RESPONSE · 1 POINT

Evaluate $5^2 + 3$.

(A) 13

(B) 16

(C) 28

(D) 64

Question 5 SELECTED RESPONSE · 1 POINT

What is the total of $2 \times 15 + 4 \times 20 + 8 \times 2^3$?

(A) 126

(B) 174

(C) 210

(D) 1,392

Question 6 SELECTED RESPONSE · 1 POINT

Miguel evaluates $12 - 2 \times 3$ and gets 30. Margaret gets 6. Who is right?

(A) Miguel, because he worked left to right

(B) Both are right

(C) Neither is right

(D) Margaret, because multiplication comes before subtraction

Part B — Test-Format Questions

These match the state test's formats: two-part questions, select-all, and written responses.

Question 7 TWO-PART QUESTION

Part A

Evaluate the numerical expression $3 \times 4^2 - 8$.

Fill in the bubble next to the one best answer.

(A) 16

(B) 24

(C) 40

(D) 136

Part B

Answer Part A before Part B — Part B asks about your reasoning.

Which reasoning shows why your answer to Part A is correct?

(A) Multiply 3×4 first, then square the product: $12^2 = 144$, and $144 - 8 = 136$.

(B) Evaluate the power first: $4^2 = 16$. Then multiply: $3 \times 16 = 48$. Then subtract: $48 - 8 = 40$.

(C) Read 4^2 as $4 \times 2 = 8$, then multiply $3 \times 8 = 24$ and subtract: $24 - 8 = 16$.

(D) Subtract first because 16 and 8 are next to each other: $16 - 8 = 8$, then $3 \times 8 = 24$.

Question 8 WRITTEN RESPONSE · 2 POINTS

Type II Reasoning: Subtracting Too Soon

> Devon evaluated $20 - 2 \times 3^2$. His work was: $3^2 = 9$, then $20 - 2 = 18$, then $18 \times 9 = 162$. He wrote that the value of the expression is 162.

Explain Devon's misconception and give the correct value of the expression.

Write your answer in complete sentences. Show or explain your mathematical thinking.

Part C — Show Your Thinking

Answer in writing, the way the state test's constructed responses work.

Question 9 WRITTEN RESPONSE · 2 POINTS

Seven friends split the bill for a pizza party. They order 4 pizzas at 3^2 dollars each, plus a one-time $6 delivery fee. Write ONE numerical expression for what each friend owes, evaluate it, and explain why the grouping symbols matter.

Write your answer in complete sentences. Show or explain your mathematical thinking.

When you finish, check your reasoning with your teacher or family. Your teacher has the scoring guide for the written responses.