



New York State Testing Program

Mathematics Test

Grade **7**

2009 Scoring Guide

33

What is the value of the expression below when $a = 2$ and $b = 6$?

$$3a^3 + 5b^2$$

Show your work.

Answer _____

QUESTION 33

STRAND 2: ALGEBRA

Complete and Correct Response:

- $3a^3 + 5b^2$
 $3(2)^3 + 5(6)^2 =$
 $3(8) + 5(36) =$
 $24 + 180 = 204$

OR other valid process

AND

- 204

Score Points:

Apply 2-point holistic rubric.

33

What is the value of the expression below when $a = 2$ and $b = 6$?

$$3a^3 + 5b^2$$

Show your work.

$$\begin{aligned}
&3a^3 + 5b^2 \\
&3 \cdot 2^3 + 5 \cdot 6^2 \\
&3 \cdot 8 + 5 \cdot 36 \\
&24 + 180 \\
&204
\end{aligned}$$

Answer 204

Parentheses
 Exponents
 Multiplication
 Division
 Addition
 Subtraction

$$\begin{aligned}
&3a^3 + 5b^2 \\
&3 \cdot 2^3 + 5 \cdot 6^2 \\
&3 \cdot 8 + 5 \cdot 36 \\
&24 + 180 \\
&204
\end{aligned}$$

$$\begin{aligned}
2^3 &= 2 \cdot 2 \cdot 2 \\
&4 \cdot 2 \\
&8
\end{aligned}$$

$$\begin{aligned}
6^2 &= 6 \cdot 6 \\
&36
\end{aligned}$$

$$\begin{array}{r}
180 \\
+ 24 \\
\hline
204
\end{array}$$

$$\begin{aligned}
&3 \cdot 8 \quad 5 \cdot 36 \\
&24 + 180 \\
&204
\end{aligned}$$

$$\begin{array}{r}
3 \cdot 36 \\
\cdot 3 \\
\hline
180
\end{array}$$

$$8 + 8 + 8 = 24$$

This response is complete and correct.

Score Point 2

33What is the value of the expression below when $a = 2$ and $b = 6$?

$$3a^3 + 5b^2$$

Show your work.

$$3(2^3) + 5(6^2) = 204$$

Answer 204

This response is complete and correct. Correct substitution with the correct answer is sufficient to demonstrate a thorough understanding of the task.

Score Point 2

33What is the value of the expression below when $a = 2$ and $b = 6$?

$$3a^3 + 5b^2$$

Show your work.

$$a=2, b=6$$

$$3 \cdot 2^3 + 5 \cdot 6^2$$

$$3 \cdot 18 + 5 \cdot 35$$

$$54 + 5 \cdot 35$$

$$54 + 166$$

$$234$$

Answer 234

This response is only partially correct. A sound procedure is demonstrated; however, a calculation error results in an incorrect answer.

Score Point 1

- 33 What is the value of the expression below when $a = 2$ and $b = 6$?

$$3a^3 + 5b^2$$

Show your work.

$$\begin{aligned} &3a^3 + 5b^2 \\ &3 \times 2^3 + 5 \times 6^2 \\ &6^3 + 30^2 = \\ &216 + 900 \end{aligned}$$

Answer 1116

This response is only partially correct. Although the substitutions are done correctly, a conceptual error is made using the order of operations, resulting in an incorrect answer.

Score Point 1

33 What is the value of the expression below when $a = 2$ and $b = 6$?

$$3a^3 + 5b^2$$

Show your work.

$$\begin{array}{r} 3 \times 2 = 6 \\ \times 6 \\ \hline \times 36 \\ \hline 6 \end{array}$$

Answer 204

This response is incorrect. Although a correct answer is shown on the answer line, a correct answer arrived at using an obviously incorrect procedure does not show even a limited understanding of the task.

Score Point 0



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Grade **7**

2009 Practice Set

33

What is the value of the expression below when $a = 2$ and $b = 6$?

$$3a^3 + 5b^2$$

Show your work.

$$\begin{aligned} &3a^3 + 5b^2 \\ &3 \cdot 2^3 + 5 \cdot 6^2 \\ &3 \cdot 8 + 5 \cdot 36 \\ &24 + 180 = 204 \end{aligned}$$

Answer 24 + 180 = 204

33What is the value of the expression below when $a = 2$ and $b = 6$?

$$3a^3 + 5b^2$$

Show your work.

$$2^3 = 8 \quad 3 \times 8 = 24 \quad + \quad 5 \times \overset{36}{\cancel{6^2}} = 180$$
$$6^2 = 36$$

Answer $3 \cdot 2^3 + 5 \cdot 6^2 = 204$

33What is the value of the expression below when $a = 2$ and $b = 6$?

$$3a^3 + 5b^2$$

Show your work.

$$3 \cdot 2^3 + 5 \cdot 6^2 = 204$$

Answer 240

33What is the value of the expression below when $a = 2$ and $b = 6$?

$$3a^3 + 5b^2$$

Show your work.

$$\begin{aligned} &3a^3 + 5b^2 \\ &3 \cdot 2^3 + 5 \cdot 6^2 \\ &3 \cdot 8 + 5 \cdot 36 \end{aligned}$$

Answer 204 units

33

What is the value of the expression below when $a = 2$ and $b = 6$?

$$3a^3 + 5b^2$$

Show your work.

$$\begin{aligned} &3a^3 + 5b^2 \\ &3 \times 2^3 + 5 \times 6^2 \\ &24 + 60 \end{aligned}$$

$$\begin{array}{r} 60 \\ 24 \\ \hline 84 \end{array}$$

Answer 84

7th GRADE MATHEMATICS

Name: _____

PRACTICE SET ANSWER KEY

PS 1	(0-2)	
PS 2	(0-2)	
PS 3	(0-2)	
PS 4	(0-2)	
PS 5	(0-2)	
PS 6	(0-2)	
PS 7	(0-2)	
PS 8	(0-2)	
PS 9	(0-2)	
PS 10	(0-2)	
PS 11	(0-2)	
PS 12	(0-2)	
PS 13	(0-2)	
PS 14	(0-2)	
PS 15	(0-2)	
PS 16	(0-2)	
PS 17	(0-2)	
PS 18	(0-2)	
PS 19	(0-2)	
PS 20	(0-2)	

PS 21	(0-3)	
PS 22	(0-3)	
PS 23	(0-3)	
PS 24	(0-3)	
PS 25	(0-3)	
PS 26	(0-3)	
PS 27	(0-3)	
PS 28	(0-3)	
PS 29	(0-3)	
PS 30	(0-3)	
PS 31	(0-3)	
PS 32	(0-3)	
PS 33	(0-3)	
PS 34	(0-3)	
PS 35	(0-3)	
PS 36	(0-3)	
PS 37	(0-3)	
PS 38	(0-3)	
PS 39	(0-3)	
PS 40	(0-3)	