

Print Student Name _____

2010–2011



Mathematics

Writing

GRADE

8

**PRACTICE
TEST BOOKLET
WITH ANSWER
KEY**

DIRECTIONS

Read each question or problem carefully. Then answer the question or work the problem. This session has 4 short-answer questions worth 2 points each and 1 open-ended question worth 4 points. Be sure to write or draw your answers.

- 1 A daycare center has a sandbox that is shaped like a rectangular prism. The sandbox has a width of 9 feet and a length of 12 feet and will be filled with sand to a depth of 12 inches.

If sand is ordered by the cubic yard, how many cubic yards of sand are needed to fill the sandbox to a depth of 12 inches? Use words, numbers, or diagrams to justify your answer.

- 2 California has recorded temperatures from 134°F in the desert to -45°F in the mountains. North Dakota has recorded temperatures from 120°F to -60°F .

Which state had the greater range of temperatures? Use words, numbers, or diagrams to justify your answer.

- 3 Omar started a CD music collection. The table below shows the number of CDs he has in his collection at the end of each month.

Omar's CD Music Collection

Number of Months	Number of CDs
1	16
2	21
3	26
4	31

- A. Write an equation that represents the relationship between the number of CDs Omar had in his collection and the number of months. Be sure to identify your variables. Use words, numbers, or diagrams to justify your answer.
- B. Use the equation you wrote for Part A to determine by the end of which month Omar will first have over 100 CDs in his collection. Use words, numbers, or diagrams to justify your answer.

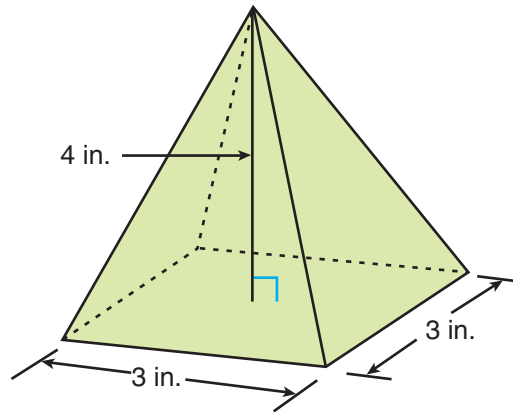
- 4 Tricia used a spinner that has five congruent sections, as shown below, for a probability experiment. She spun the arrow a total of 80 times. The table shows the number of times the arrow stopped on each of the five sections.

**Spinner Results**

Spinner Section	Number of Times
1	23
2	7
3	18
4	21
5	11

Which spinner section had an experimental probability that was closest to the theoretical probability of the arrow stopping on that section? Use words, numbers, or diagrams to justify your answer.

- 5 Eldon is making candles as gifts. The first candle he made is shaped like a square pyramid and the second candle is shaped like a cube. The pyramid candle has a height of 4 inches and a 3-inch-by-3-inch square base, as shown below.



- A. What is the volume, in cubic inches, of the pyramid-shaped candle? Use words, numbers, or diagrams to justify your answer.
- B. The cube-shaped candle Eldon made has edges that are 3 inches in length. What is the volume, in cubic inches, of this candle? Use words, numbers, or diagrams to justify your answer.
- C. Eldon wants to make two more candles with the following conditions.
- The volume of each of the candles should be approximately 64 cubic inches.
 - One of the candles will be shaped like a rectangular prism, and the other will be shaped like a cylinder.

What could be the dimensions, in inches, of these two candles Eldon wants to make? Use words, numbers, or diagrams to justify your answer.

DIRECTIONS

Read each sentence. The sentence with words that are underlined may have a mistake in punctuation, capitalization, or word usage. If you find a mistake, choose the answer that is the best way to write the underlined section of the sentence. If there is no mistake, choose *Correct as is*. The sentence without underlined words may have a mistake in sentence structure. If you find a mistake, choose the answer that is written most clearly and correctly. Choose *Correct as is* if there is no mistake. Multiple-choice questions are worth 1 point each.

1 Each member of the group were held responsible for a different part of the project.

- A was held responsible
- B have been held responsible
- C are being held responsible
- D *Correct as is*

2 Including me, most of my family prefers spicy food; my sister liking mild food.

- A Like most of my family, I prefer spicy food; however, my sister prefers mild food.
- B I prefer spicy food and so does my family; only my sister being the one who prefers mild food.
- C My sister prefers mild food, while most of my family prefers spicy food; including me.
- D *Correct as is*

DIRECTIONS

A word, phrase, or sentence is underlined because it may contain a mistake in grammar, usage, punctuation, capitalization, or spelling. Look carefully at each underlined word, phrase, or sentence. If there is a mistake, make the correction. If there is no mistake, write the word "OK" over the underlined word, phrase, or sentence.

Morse Code

Most people know only enough Morse code to be able to signal for help. SOS, the international distress call, was developed based on Morse code. Three short dots represent the letter S, and three long dashes stand for the letter O, making SOS a simple signal. SOS does not stand for anything; it was chosen as a distress call because it is easy to remember.

Samuel Morse developed the Morse code in the 1830s as a way to communicate over long distances. The code consisted of dots, dashes, and spaces combined in different ways to represent letters and numbers. Pulses of different lengths carried Morses messages. In time, sounds and flashing lights was other popular ways of sending messages in Morse code. This code was an important way to send messages for many years, and people all over the world used it. With the invention of newer forms of communication, Morse code became less practice, however it is still in use today by amateur radio operators and for some navigational purposes.

Today's Morse code is slightly different from the code Samuel Morse invented. As europeans began transmitting through dots and dashes, they discovered that Morse code was not very good at sending non-English words. In 1851, a group of nations designed a new variety of the code. The international Morse code was simpler and easier to use with languages other than English.

NEW MEXICO 2010 PRACTICE TEST SCORING GUIDE
GRADE 8 MATH

1. A daycare center has a sandbox that is shaped like a rectangular prism. The sandbox has a width of 9 feet and a length of 12 feet and will be filled with sand to a depth of 12 inches.

If sand is ordered by the cubic yard, how many cubic yards of sand are needed to fill the sandbox to a depth of 12 inches? Use words, numbers, or diagrams to justify your answer.

NEW MEXICO 2010 PRACTICE TEST SCORING GUIDE
GRADE 8 MATH

Scoring Guide

Score	Description
2	The student response <ul style="list-style-type: none">• offers a correct solution and is well supported by well-developed and accurate explanations.• gives evidence that an appropriate problem-solving strategy was selected and implemented, but may contain minor errors that do not detract from the overall quality of the student response.• is clearly organized and focused, and shows a mathematical understanding of the task or concept.• contains sufficient work to convey thorough understanding of the problem.
1	The student response <ul style="list-style-type: none">• offers a correct solution with no supporting evidence or explanation.• offers a partially correct answer to the problem.• may contain flaws indicating an incomplete understanding of the task or concept.• may show faulty reasoning leading to weak answers or conclusions.• may demonstrate unclear communication in writing or diagrams.• may demonstrate a poor understanding of relevant mathematical procedure or concepts.
0	The student response <ul style="list-style-type: none">• gives an incorrect response with no work shown.• offers no mathematical understanding of the problem.• does not address the problem.

Sample responses

$$V = lwh = 12 \text{ ft.} \cdot 9 \text{ ft.} \cdot 1 \text{ ft.} = 108 \text{ ft.}^3$$

$$\frac{108 \text{ ft.}^3}{27 \text{ ft.}^3} = 4 [\text{yds.}^3]$$

or

$$V = lwh = 4 \text{ yds.} \cdot 3 \text{ yds.} \cdot \frac{1}{3} \text{ yds.} = \frac{12}{3} \text{ yds.}^3 = 4 [\text{yds.}^3]$$

NEW MEXICO 2010 PRACTICE TEST SCORING GUIDE
GRADE 8 MATH

2. California has recorded temperatures from 134°F in the desert to -45°F in the mountains. North Dakota has recorded temperatures from 120°F to -60°F .

Which state had the greater range of temperatures? Use words, numbers, or diagrams to justify your answer.

Scoring Guide

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Sample response

California:

$$134 - (-45) = 179$$

North Dakota:

$$120 - (-60) = 180$$

$179 < 180$, so North Dakota had the greater range.

NEW MEXICO 2010 PRACTICE TEST SCORING GUIDE
GRADE 8 MATH

3. Omar started a CD music collection. The table below shows the number of CDs he has in his collection at the end of each month.

Omar's CD Music Collection

Number of Months	Number of CDs
1	16
2	21
3	26
4	31

- A. Write an equation that represents the relationship between the number of CDs Omar had in his collection and the number of months. Be sure to identify your variables. Use words, numbers, or diagrams to justify your answer.
- B. Use the equation you wrote for Part A to determine by the end of which month Omar will first have over 100 CDs in his collection. Use words, numbers, or diagrams to justify your answer.

NEW MEXICO 2010 PRACTICE TEST SCORING GUIDE
GRADE 8 MATH

Scoring Guide

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0	The student response <ul style="list-style-type: none">• gives an incorrect response with no work shown.• offers no mathematical understanding of the problem.• does not address the problem.

Sample responses

A)

$$c = 5m + 11$$

where c is the number of CDs and m is the number of months.

B)

$$100 = 5m + 11$$

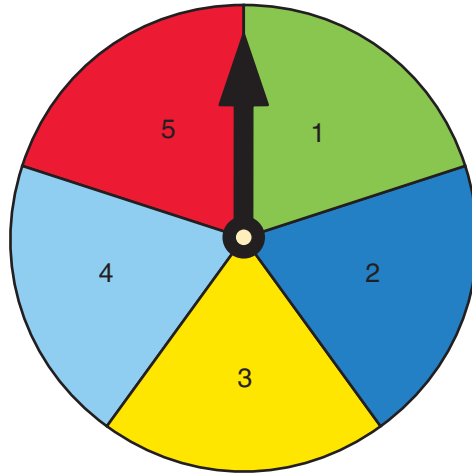
$$89 = 5m$$

$$\frac{89}{5} = 17.8 = m$$

Omar will have 100 CDs by the end of month 18.

NEW MEXICO 2010 PRACTICE TEST SCORING GUIDE
GRADE 8 MATH

4. Tricia used a spinner that has five congruent sections, as shown below, for a probability experiment. She spun the arrow a total of 80 times. The table shows the number of times the arrow stopped on each of the five sections.



Spinner Results

Spinner Section	Number of Times
1	23
2	7
3	18
4	21
5	11

Which spinner section had an experimental probability that was closest to the theoretical probability of the arrow stopping on that section? Use words, numbers, or diagrams to justify your answer.

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Scoring Guide

Score	Description
2	The student response <ul style="list-style-type: none">• offers a correct solution and is well supported by well-developed and accurate explanations.• gives evidence that an appropriate problem-solving strategy was selected and implemented, but may contain minor errors that do not detract from the overall quality of the student response.• is clearly organized and focused, and shows a mathematical understanding of the task or concept.• contains sufficient work to convey thorough understanding of the problem.
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0	The student response <ul style="list-style-type: none">• gives an incorrect response with no work shown.• offers no mathematical understanding of the problem.• does not address the problem.

Sample response

There are 5 congruent sections.

The theoretical chance of landing on any 1 of the 5 sections is $\frac{1}{5}$ or 20%.

The experimental probability of Section 1 was $\frac{23}{80} = 28.75\%$.

The experimental probability of Section 2 was $\frac{7}{80} = 8.75\%$.

The experimental probability of Section 3 was $\frac{18}{80} = 22.50\%$.

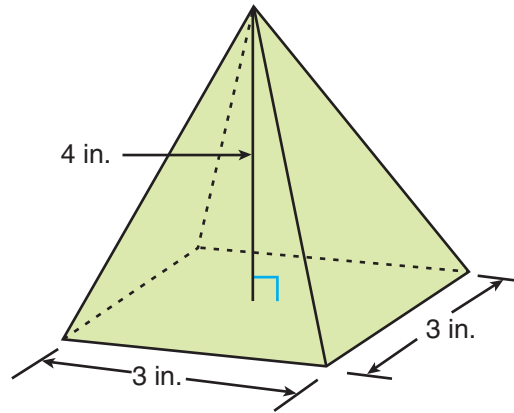
The experimental probability of Section 4 was $\frac{21}{80} = 26.25\%$.

The experimental probability of Section 5 was $\frac{11}{80} = 13.75\%$.

The spinner section whose experimental probability was closest to the theoretical probability of 20% was Section 3, which had 22.50%.

NEW MEXICO 2010 PRACTICE TEST SCORING GUIDE
GRADE 8 MATH

5. Eldon is making candles as gifts. The first candle he made is shaped like a square pyramid and the second candle is shaped like a cube. The pyramid candle has a height of 4 inches and a 3-inch-by-3-inch square base, as shown below.



- A. What is the volume, in cubic inches, of the pyramid-shaped candle? Use words, numbers, or diagrams to justify your answer.
- B. The cube-shaped candle Eldon made has edges that are 3 inches in length. What is the volume, in cubic inches, of this candle? Use words, numbers, or diagrams to justify your answer.
- C. Eldon wants to make two more candles with the following conditions.
- The volume of each of the candles should be approximately 64 cubic inches.
 - One of the candles will be shaped like a rectangular prism, and the other will be shaped like a cylinder.

What could be the dimensions, in inches, of these two candles Eldon wants to make? Use words, numbers, or diagrams to justify your answer.

NEW MEXICO 2010 PRACTICE TEST SCORING GUIDE
GRADE 8 MATH

Scoring Guide

Score	Description
4	<p>The student response</p> <ul style="list-style-type: none"> • offers a correct solution and is well supported by well-developed and accurate explanations. • gives evidence that an appropriate problem-solving strategy was selected and implemented, but may contain minor errors that do not detract from the overall quality of the student response. • is clearly organized and focused, and shows a mathematical understanding of the task or concept. • contains sufficient work to convey thorough understanding of the problem.
3	<p>The student response</p> <ul style="list-style-type: none"> • offers a generally correct solution, but contains minor flaws in reasoning or computation. • gives evidence that an appropriate problem-solving strategy was selected and implemented, but may contain minor arithmetic or algebraic errors that do detract from the overall quality of the student response. • is clearly focused and well organized, but neglects some aspect of the complete solution to the problem. • lacks significant detail to convey thorough understanding of the task or concept to warrant a 4.
2	<p>The student response</p> <ul style="list-style-type: none"> • offers a partially correct answer to the problem. • may contain flaws indicating an incomplete understanding of the task or concept. • may show faulty reasoning leading to weak answers or conclusions. • may demonstrate unclear communication in writing or diagrams. • may demonstrate a poor understanding of relevant mathematical procedure or concepts.
1	<p>The student response</p> <ul style="list-style-type: none"> • offers a correct solution with no supporting evidence or explanation. • offers little or no supporting detail, conveying limited understanding. • contains numerous errors in computation and reasoning that detract from the overall quality of the response. • provides vague interpretation to the solution/explanation, indicating little or no mathematical understanding of the task or concept.
0	<p>The student response</p> <ul style="list-style-type: none"> • gives an incorrect response with no work shown. • offers no mathematical understanding of the problem. • does not address the problem.

NEW MEXICO 2010 PRACTICE TEST SCORING GUIDE
GRADE 8 MATH

Sample responses

A)

$$V = \frac{1}{3}Bh = \frac{1}{3}(3 \cdot 3)4 = 12 [\text{in.}^3]$$

B)

$$V = lwh = 3^3 = 27 [\text{in.}^3]$$

C)

Rectangular Prism:

$$V = 64 = lwh \rightarrow \text{many solutions, e.g.,}$$

$$4^3 = 64$$

$$8^2 \cdot 1 = 64$$

$$4^2 \cdot 4 = 64$$

$$2^2 \cdot 16 = 64$$

Cylinder:

$$V = 64 = \pi r^2 h \approx 20 \pi \rightarrow \text{many solutions, e.g.,}$$

$$\pi (4.47)^2 \cdot 1 \approx 20 \pi$$

$$\pi (3.16)^2 \cdot 2 \approx 20 \pi$$

$$\pi (2.58)^2 \cdot 3 \approx 20 \pi, \text{ etc.}$$

GRADE 8 MATHEMATICS PRACTICE TEST ANSWER KEY

Question Number	1	2	3	4	5
Strand ¹	M	N	A	D	G
Benchmark	M1	N2	A1	D3	G4
Performance Standard	2		1	4	4
Depth of Knowledge	2		2	2	3
Item Type ²	SA	SA	SA	SA	OE
Answer Key					
Total Possible Points	2	2	2	2	4

¹Strand: N = Numbers and Operations, D = Data Analysis and Probability,

G = Geometry, M = Measurement, A = Algebra

²Item Type: SA = Short Answer, OE = Open Ended

NEW MEXICO 2010 PRACTICE TEST SCORING GUIDE
GRADE 8 WRITING

Morse Code

Most people know only enough Morse code to be able to signal for help. SOS, the international distress call, was developed based on Morse code. Three short dots represent the letter S, and three long dashes stand for the letter O, making SOS a simple signal. SOS does not stand for anything; it was chosen as a distress call because it is easy to remember.

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NEW MEXICO 2010 PRACTICE TEST SCORING GUIDE
GRADE 8 WRITING

Today's Morse code is slightly different from the code Samuel Morse invented. As europeans began transmitting through dots and dashes, they discovered that Morse code was not very good at sending non-English words. In 1851, a group of nations designed a new variety of the code. The international Morse code was simpler and easier to use with languages other than English.

The editing task requires students to recognize and correct various grade-appropriate errors in sentence structure and mechanics (spelling, punctuation, grammar, and capitalization). Phrases containing possible errors are underlined.

Underline 1 No mistake

Underline 2 Punctuation—Change “Morses” to “Morse’s” to show possession.

Underline 3 Grammar—Change the verb “was” to “were” to match the plural subject.

Underline 4 Spelling—Change “importent” to “important.”

Underline 5 Spelling—Change “practicle” to “practical.”

Underline 6 Capitalization—Change “europeans” to “Europeans” because it is a proper noun.

GRADE 8 ENGLISH WRITING PRACTICE TEST ANSWER KEY

Question Number	1	2	3
Standard¹	II	II	II
Benchmark	B	B	B
Item Type²	MC	MC	ET
Answer Key	A	A	
Total Possible Points	1	1	6

¹Standard: II = Writing for Expression

²Item Type: MC = Multiple Choice, ET = Editing Task



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