



# ***New York State Testing Program***

## **Mathematics Test**

Grade **6**

**2009 Scoring Guide**

**30**

Cruz has collected some marbles. The colors of the marbles are listed below.

- 8 red marbles
- 2 blue marbles
- 7 yellow marbles
- 3 green marbles

Cruz mixes all the marbles in a bag and then turns the bag upside-down so that only one marble falls out at a time. What is the probability that the **first** marble to fall out will be a blue marble?

**Answer** \_\_\_\_\_

What is the probability that the **first** marble to fall out will be red, yellow, or green?

**Show your work.**

**Answer** \_\_\_\_\_

**QUESTION 30**

**STRAND 5: STATISTICS AND PROBABILITY**

*Complete and Correct Response:*

- $\frac{2}{20}$  or 2:20 or 2 out of 20

**OR**

$$\frac{1}{10} \text{ or } 1:10 \text{ or } 1 \text{ out of } 10$$

**AND**

- red marbles = 8  
yellow marbles = 7  
green marbles = 3  
 $8 + 7 + 3 = 18$   
total marbles = 20

**AND**

- $\frac{18}{20}$  or 18:20 or 18 out of 20

**OR**

$$\frac{9}{10} \text{ or } 9:10 \text{ or } 9 \text{ out of } 10$$

*Score Points:*

Apply 2-point holistic rubric.

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Answer            $\frac{2}{20}$           

What is the probability that the first marble to fall out will be red, yellow, or green?

Show your work.

$$\begin{array}{r} 8 \\ 7 \\ +3 \\ \hline 18 \end{array} \quad \begin{array}{r} 8 \\ 7 \\ 3 \\ +2 \\ \hline 20 \end{array} \quad \frac{18}{20}$$

Answer            $\frac{18}{20}$           

This response is complete and correct.

**Score Point 2**

**30**

Cruz has collected some marbles. The colors of the marbles are listed below.

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Cruz mixes all the marbles in a bag and then turns the bag upside-down so that only one marble falls out at a time. What is the probability that the first marble to fall out will be a blue marble?

Answer  $\frac{2}{4}$

What is the probability that the first marble to fall out will be red, yellow, or green?

*Show your work.*

$$\begin{array}{r} 8 \\ 2 \\ 7 \\ + 3 \\ \hline 20 \end{array}$$

Answer  $\frac{78}{20}$

This response is only partially correct. The work shown demonstrates a sound procedure for determining the probability of the first marble to fall out, and a correct answer is shown; however, the probability of the blue marble is incorrect.

**Score Point 1**

30

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Cruz mixes all the marbles in a bag and then turns the bag upside-down so that only one marble falls out at a time. What is the probability that the first marble to fall out will be a blue marble?

Answer 1/10

$$\frac{2}{20} = \frac{1}{10} \quad \frac{8}{20} + \frac{2}{20} + \frac{7}{20} + \frac{3}{20}$$

What is the probability that the first marble to fall out will be red, yellow, or green?

Show your work.

$$\begin{array}{r} 8 \\ + 7 \\ \hline 3 \\ \hline 17 \end{array}$$

$$\frac{17}{20} =$$

$$\begin{array}{r} 8 \\ + 2 \\ \hline 7 \\ 3 \\ \hline 20 \end{array}$$

Answer 17/20

This response is only partially correct. A sound mathematical procedure is demonstrated for determining the probability of the first marble being blue. However, a calculation error for determining the second probability results in an incorrect answer.

**Score Point 1**

**30**

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Cruz mixes all the marbles in a bag and then turns the bag upside-down so that only one marble falls out at a time. What is the probability that the first marble to fall out will be a blue marble?

Answer  $\frac{2}{10}$

What is the probability that the first marble to fall out will be red, yellow, or green?

*Show your work.*

Answer  $\frac{13}{19}$

This response is incorrect.

**Score Point 0**

**30**

Cruz has collected some marbles. The colors of the marbles are listed below.

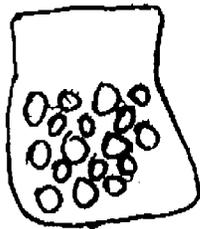
- 8 red marbles
- 2 blue marbles
- 7 yellow marbles
- 3 green marbles

Cruz mixes all the marbles in a bag and then turns the bag upside-down so that only one marble falls out at a time. What is the probability that the first marble to fall out will be a blue marble?

Answer 1/20

What is the probability that the first marble to fall out will be red, yellow, or green?

Show your work.



there is 18 marbles and one drops so that's 1/18

Answer 1/18

This response is incorrect.

Score Point 0



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Grade **6**

**2009 Practice Set**

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Cruz mixes all the marbles in a bag and then turns the bag upside-down so that only one marble falls out at a time. What is the probability that the first marble to fall out will be a blue marble?

Answer  $\frac{2}{20}$

What is the probability that the first marble to fall out will be red, yellow, or green?

*Show your work.*

$$\begin{array}{r} 8 \\ 2 \\ + 7 \\ \hline 17 \\ + 3 \\ \hline 20 \end{array} \quad \frac{18}{20}$$

Answer  $\frac{18}{20}$

**30**

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- 3 green marbles

Cruz mixes all the marbles in a bag and then turns the bag upside-down so that only one marble falls out at a time. What is the probability that the first marble to fall out will be a blue marble?

Answer            $\frac{1}{10}$           

What is the probability that the first marble to fall out will be red, yellow, or green?

*Show your work.*

$$\frac{18}{20} = \frac{9}{10}$$

Answer            $\frac{9}{10}$

30

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Cruz mixes all the marbles in a bag and then turns the bag upside-down so that only one marble falls out at a time. What is the probability that the first marble to fall out will be a blue marble?

Answer  $\frac{2}{20}$

What is the probability that the first marble to fall out will be red, yellow, or green?

Show your work.

8 red marbles  
2 blue marbles  
7 yellow marbles  
3 green marbles

$8 + 2 = 10 + 7 = 17 + 3 = 20$

Answer  $\frac{15}{20}$

**30**

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- 3 green marbles

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Answer            $\frac{1}{10}$           

$$8 + 7 + 3 + 2 = 20$$
$$\frac{2}{20} \div 2 = \frac{1}{10}$$

What is the probability that the first marble to fall out will be red, yellow, or green?

*Show your work.*

$$8 + 7 + 3 + 2 = 20 - 2 = \frac{18}{20} \div 2 = \frac{9}{10}$$

Answer            $\frac{9}{10}$

**30**

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Cruz mixes all the marbles in a bag and then turns the bag upside-down so that only one marble falls out at a time. What is the probability that the first marble to fall out will be a blue marble?

Answer 1/10

What is the probability that the first marble to fall out will be red, yellow, or green?

*Show your work.*

$$\frac{8}{20} = \text{Red} \quad \frac{7}{20} = \text{Yellow} \quad \frac{3}{20} = \text{Green}$$

Answer Red

$$\text{Red} = \frac{8}{20} \div \frac{2}{2} = \frac{4}{10} \div \frac{2}{2} = \frac{2}{5}$$

# 6<sup>th</sup> 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	(0-2)	
PS 22	(0-2)	
PS 23	(0-2)	
PS 24	(0-2)	
PS 25	(0-2)	

PS 26	(0-2)	
PS 27	(0-2)	
PS 28	(0-2)	
PS 29	(0-2)	
PS 30	(0-2)	
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)	
PS 41	(0-3)	
PS 42	(0-3)	
PS 43	(0-3)	
PS 44	(0-3)	
PS 45	(0-3)	
PS 46	(0-3)	
PS 47	(0-3)	
PS 48	(0-3)	
PS 49	(0-3)	
PS 50	(0-3)	