Home   Tests   Mathematics (Grades 5–12)   Preparation Materials   MTLE Elements:
Mathematics (Grades 5–12)   Subtest 2: Sample Items

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Subtest 2 Sample Items

1. A 26 ft. clothesline reaches across a city alley from a 5th floor window in one building to a 4th floor window in another building. If the vertical drop between the windows is 10 ft., what is the approximate angle of elevation, θ, of the clothesline?

A. 21°

B. 23°

C. 67°

D. 69°

2. The graphs of the polar equation $r = 2\cos\theta$ and the rectangular equation $x^2 + y^2 = 4$ intersect at a point on the:

A. positive x-axis.

B. negative x-axis.

C. positive y-axis.

D. negative y-axis.

3. Construction of a box plot to display data is particularly useful when:

A. the number of data points is relatively small.

B. a quick preliminary look at the shape of the data distribution is needed.

C. comparisons are to be made between data sets of different sizes.

D. identification of individual data points is desirable.

4. A clothing store tracks its inventory of red (R), green (G), and blue (B) clothing with the matrices below.

The matrix on the left shows the inventory before sales are recorded and the matrix on the right shows the inventory after sales have been recorded. Which of the following categories of clothing shows the greatest percent turnover?

A. blue

B. shorts

C. red

D. pants

5. Which of the following strategies would be most effective in promoting students' understanding and retention of new vocabulary associated with a specific unit of study?

A. using weekly quizzes to assess students' knowledge of newly introduced vocabulary

B. having students look up definitions of new vocabulary in both a textbook glossary and a standard dictionary

C. providing multiple opportunities for students to use new vocabulary in discussions and in their work

D. encouraging students to enter new vocabulary in a personal dictionary of words they find interesting or useful

Answer Key

Item Number	Correct Response	Subarea	Objective
1	B	I. Measurement and Geometry	0008
2	A	I. Measurement and Geometry	0010

Item Number	Correct Response	Subarea	Objective
3	C	II. Data, Probability, and Discrete Math	0011
4	D	II. Data, Probability, and Discrete Math	0013
5	C	III. Mathematical Processes	0015

⬆ Top of Page

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		II. Data, Probability, and Discrete Math	
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