



TABE 11 & 12 MATHEMATICS PRACTICE ITEMS

1. Which expression is equivalent to $(x^2y)^3 \cdot x^3$?

- A. x^5y^3
- B. x^6y^3
- C. x^9y^3
- D. $x^{18}y^3$

2. The lists show the measured heights, in meters, of trees in two different sections of a forest.

Section A: 4.8, 5.0, 5.3, 5.8, 6.1, 6.5, 6.5

Section B: 3.8, 3.8, 5.8, 6.4, 6.6, 6.8, 9.2

Which statement makes a correct conclusion based on the interquartile range of the two data sets?

- A. The trees in Section B most likely have more consistent heights than the trees in Section A.
- B. The trees in Section A most likely have more consistent heights than the trees in Section B.
- C. A randomly selected tree in Section B will most likely be taller than a randomly selected tree in Section A.
- D. A randomly selected tree in Section A will most likely be taller than a randomly selected tree in Section B.



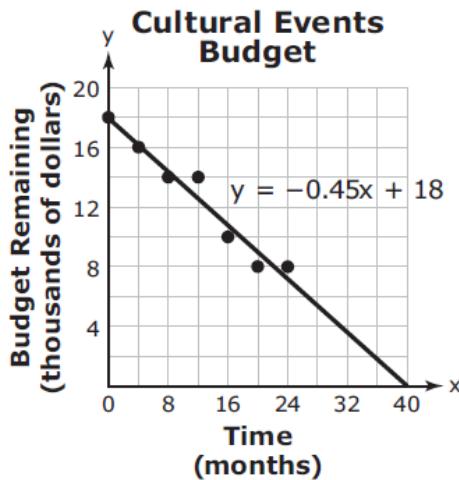
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3. A rainwater collection system uses a cylindrical storage tank with a diameter of 50 centimeters and a height of 80 centimeters.

What is the total volume of water, in cubic centimeters, that can be collected?

- A. 12,566 cubic centimeters
- B. 50,000 cubic centimeters
- C. 157,080 cubic centimeters
- D. 251,327 cubic centimeters

4. A county clerk has a given amount of money to budget for cultural events.



Based on the scatterplot, what does the point (0, 18) represent?

- A. the total amount of the budget given to the county
- B. the total amount of the budget spent after 18 months
- C. the average amount spent out of the budget each month
- D. the predicted amount of time after which the entire budget will be spent



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5. At an aquarium, researchers are preparing a mixture of salt water. The desired ratio is 90 grams of salt per liter of water.

- 1 ounce = 28.35 grams
- 1 gallon = 3.8 liters

What is the ratio in ounces per gallon?

- A. 0.8 ounce per gallon
- B. 3.2 ounces per gallon
- C. 12.1 ounces per gallon
- D. 23.7 ounces per gallon

6. Which of these expressions are equivalent to 5^2 ? Select the four that apply.

- A. $\frac{5^5}{5^3}$
- B. $\frac{5^8}{5^4}$
- C. $\frac{5^8}{5^6}$
- D. $5^{-1} \times 5^{-2}$
- E. $5^{-1} \times 5^3$
- F. $5^{-4} \times 5^6$



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7. Joan uses the function $C(x) = 0.11x + 12$ to calculate her monthly cost for electricity.

- $C(x)$ is the total cost (in dollars).
- x is the amount of electricity used (in kilowatt-hours).

Which of these statements are true? Select the three that apply.

- A. Joan's fixed monthly cost for electricity use is \$0.11.
- B. The cost of electricity use increases \$0.11 each month.
- C. If Joan uses no electricity, her total cost for the month is \$12.
- D. Joan pays \$12 for every kilowatt-hour of electricity that she uses.
- E. The initial value represents the maximum cost per month for electricity.
- F. A graph of the total cost for $x \geq 0$ kilowatt-hours of energy used is a straight line.
- G. The slope of the function $C(x)$ represents the increase in cost for each kilowatt-hour used.



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ANSWER KEY:

1. C
2. B
3. C
4. A
5. C
6. A, C, E, F
7. C, F, G