



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.

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

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?

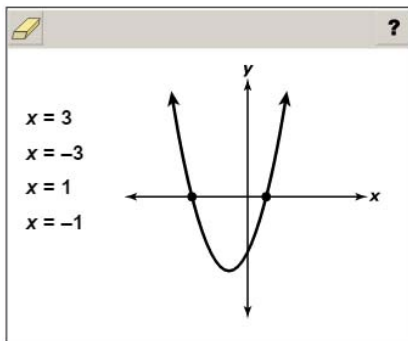
- A. 0.8 ounces per gallon
- B. 3.2 ounces per gallon
- C. 12.1 ounces per gallon
- D. 23.7 ounces per gallon

6 A. Which Expression can be used to find the zeros of $f(x)=x^2+2x - 3$?

$$f(x) = (x+3)(\quad)$$

- A. $X+3$
- B. $X-3$
- C. $X-1$
- D. $X+1$

6 B. What are the x-intercepts of the graph of $f(x) = f(x)=x^2+2x - 3$?



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.