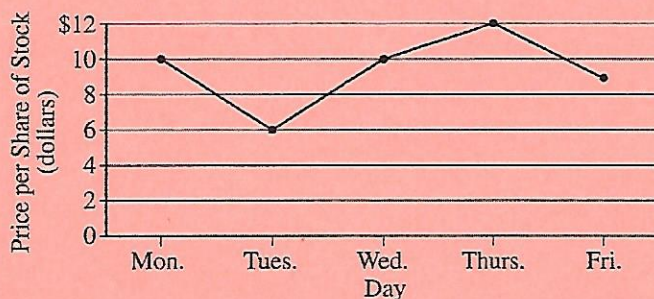21. $m = 4$ and $n = 2$

For each of the following expressions, indicate whether the value will be a rational or irrational number.

Expression	Rational	Irrational
$\sqrt[3]{m - n}$		
$\sqrt{m^3}$		
$\sqrt[3]{\dfrac{m}{n}}$		
$\sqrt{m + n^2}$		

Click on your choices.

22. A student asserted that n^2 is greater than or equal to n for all real numbers n. Of the following, which is a value of n that provides a counterexample to the student's claim?

(A) $-\dfrac{1}{2}$ (B) 0 (C) $\dfrac{1}{2}$ (D) 2

23. The graph above shows the closing price of one share of stock of Company Y for each of the five business days last week. Which of the following is closest to the percent change in the closing price of one share of stock from Tuesday to Wednesday?

(A) 40%
(B) 55%
(C) 67%
(D) 150%

24. Let A be a nonempty set and let B and C be any two subsets of A. Which of the following statements must be true?

(A) $B \cup C = A$
(B) $B \cap C = \{ \ \}$, the empty set
(C) $B \subset C \subset A$
(D) $B \cup C \subset A$

25. The area of a rectangular field is the product of its length and width. If each dimension of the rectangular field is multiplied by 3, then the area of the enlarged field is how many times the area of the original field?

If it snows, then school is closed.

26. Which of the following is logically equivalent to the statement above?

(A) If it snows, then school is not closed.
(B) If school is closed, then it snows.
(C) If it does not snow, then school is not closed.
(D) If school is not closed, then it does not snow.

27. A bookstore has 900 books in stock, of which 600 are paperback and 300 are hardcover. All of the books are either fiction or nonfiction. If 500 of the books are nonfiction and 400 of the nonfiction books are paperback, how many of the books are fiction and hardcover?

(A) 200
(B) 300
(C) 400
(D) 500