



# MIXED REVIEW FOR TEKS



**TAKS PRACTICE**  
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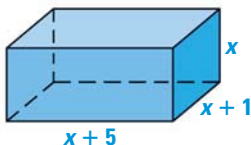
## Lessons 5.6–5.9

### MULTIPLE CHOICE

1. **POLYNOMIAL FUNCTIONS** Which polynomial function has zeros  $-2$ ,  $1$ , and  $4 - i$ ? **TEKS a.3**

- (A)  $f(x) = x^4 - 7x^3 + 2x^2 + 28x - 24$
- (B)  $f(x) = x^4 - 7x^3 + 7x^2 + 33x - 34$
- (C)  $f(x) = x^4 - 9x^3 + 18x^2 + 4x - 24$
- (D)  $f(x) = x^4 - 9x^3 + 23x^2 - x - 34$

2. **GEOMETRY** The volume of the rectangular prism shown is 180 cubic inches. What is the height of the rectangular prism? **TEKS a.4**



- (F) 3 inches
- (G) 4 inches
- (H) 5 inches
- (J) 8 inches

3. **MAXIMUM VOLUME** You want to make an open box from a piece of cardboard to hold your school supplies. The box will be formed using the method described in Example 3 on page 389. The original piece of cardboard is 20 inches by 30 inches. You want the box to have the greatest volume possible. About how long should you make the cuts? **TEKS a.4**

- (A) 3.9 inches
- (B) 7.8 inches
- (C) 10 inches
- (D) 12.2 inches

4. **DESCARTES' RULE OF SIGNS** How many positive real zeros does the following function have?

$$f(x) = 2x^5 + 5x^4 + 5x^3 + 25x^2 + 7x - 10 \quad \text{TEKS a.3}$$

- (F) 1
- (G) 2
- (H) 4
- (J) 5

5. **SCULPTURE** You are making a sculpture that is a pyramid with a square base. You want the height of the pyramid to be 4 inches less than the length of a side of the base. You want the volume of the sculpture to be 200 cubic inches. What is the approximate length of a side of the sculpture's base? **TEKS a.4**

- (A) 6.3 inches
- (B) 7.5 inches
- (C) 10 inches
- (D) 11.3 inches

6. **REVENUE** For the period 1985–2005, the annual revenue  $R$  (in millions of dollars) of a department store can be modeled by

$$R = 0.0014t^3 - 0.0305t^2 + 0.232t + 3.19$$

where  $t$  is the number of years since 1985. According to the model, in which year was the revenue \$3.86 million? **TEKS a.3**

- (F) 1990
- (G) 1994
- (H) 1995
- (J) 2000



### GRIDDED ANSWER

7. **BUSINESS** Your friend has started a caddying business. The table shows the profit  $p$  (in dollars) of the business in the first 5 months. Use finite differences to find a polynomial model for the data. Then use the model to predict the profit in the seventh month. **TEKS 2A.1.B**

Month, $t$	1	2	3	4	5
Profit, $p$	4	2	6	22	56