



# MIXED REVIEW FOR TEKS



**TAKS PRACTICE**

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## Lessons 10.1–10.4

### MULTIPLE CHOICE

1. **BUSINESS** A company's yearly profits from 1996 to 2006 can be modeled by the function  $y = x^2 - 8x + 80$  where  $y$  is the profit (in thousands of dollars) and  $x$  is the number of years since 1996. What was the company's least yearly profit during the time period?

TEKS A.9.D

- (A) \$4,000                      (B) \$48,000  
(C) \$64,000                    (D) \$80,000

2. **LACROSSE** During a game of lacrosse, you throw a ball twice using a lacrosse stick. In the first throw, the ball is released 8 feet above the ground with an initial vertical velocity of 35 feet per second. In the second throw, the ball is released 8 feet above the ground with an initial vertical velocity of 42 feet per second. Which statement correctly compares the two throws if no one catches either throw? TEKS A.9.D

- (F) The second throw is in the air longer.  
(G) The first throw reaches a greater height.  
(H) The two throws have the same maximum height.  
(J) The first throw travels 7 feet farther.

3. **FALLING OBJECTS** In a science experiment, two balls are dropped from a building at the same time, one from a window 40 feet above the ground and the other from the roof 80 feet above the ground. What is the height of the ball dropped from the roof when the other ball hits the ground? TEKS 2A.9.D

- (A) 5 ft                              (B) 20 ft  
(C) 30 ft                            (D) 40 ft

4. **FENCING** You want to enclose a rectangular area with 48 feet of fencing. What is the greatest possible area that you can enclose with the fence? TEKS A.4.A

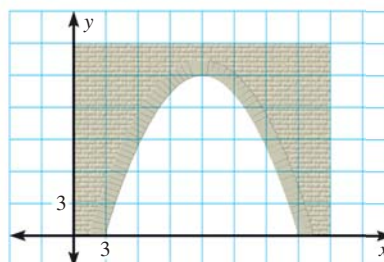
- (F) 119 ft<sup>2</sup>                        (G) 140 ft<sup>2</sup>  
(H) 144 ft<sup>2</sup>                        (J) 576 ft<sup>2</sup>

5. **FOOTBALL** A football player attempts a field goal. The path of the kicked football can be modeled by  $y = -0.03x^2 + 1.8x$  where  $x$  is the horizontal distance (in yards) traveled by the football and  $y$  is the corresponding height (in yards) of the football. How high will the football be after it has traveled 45 yards? TEKS A.10.A

- (A) 20.25 yd                      (B) 30 yd  
(C) 60.75 yd                      (D) Not here



6. **TUNNEL** The opening of the tunnel shown can be modeled by the graph of the equation  $y = -0.18x^2 + 4.4x - 12$  where  $x$  and  $y$  are measured in feet. Which is the maximum height of the tunnel? TEKS A.9.D



- (F) 12.22 ft                        (G) 14.62 ft  
(H) 14.89 ft                        (J) 26.89 ft

### GRIDDED ANSWER

7. **SUBWAY** The force  $F$  (in newtons) that a passenger feels when a subway train goes around a curve is given by  $F = \frac{mv^2}{r}$  where  $m$  is the mass (in kilograms) of the passenger,  $v$  is the velocity (in meters per second) of the train, and  $r$  is the radius (in meters) of the curve. A passenger who has a mass of 75 kilograms experiences a force of 18,150 newtons while going around a curve that has a radius of 8 meters. Find the velocity of the train in meters per second. TEKS A.4.A