

# Algebra I EOC Practice #2

**SPI 3102.1.2: Write an equation symbolically to express a contextual problem.**

1. Trevor Benjamin is a salesperson who is paid a monthly salary of \$500 plus 2% commission on sales. Write an equation that represents Trevor's monthly salary.

A.  $S = 2x + 500$   
B.  $S = 500x + .02$   
C.  $S = .02x + 500$   
D.  $S = .05x + 2$

*For questions 2 and 3, use the following information.*

**Dollywood first opened in 1961 as a small tourist attraction named "Rebel Railroad." After several name changes, Dolly Parton became co-owner in 1986 and the park was renamed "Dollywood."**

2. Let  $y$  represent the number of years after 1961 that the park was renamed Dollywood. Write an expression for the year the park was renamed.

A.  $1961 - y$   
B.  $1986 - y$   
C.  $1961 + y$   
D.  $1986 + y$

3. Write an equation to represent the year the park was renamed.

A.  $1961 + y = 1986$   
B.  $1986 + y = 1961$   
C.  $y - 1961 = 1986$   
D.  $y - 1986 = 1961$

4. Mrs. Doubtfire is planning to place a fence around her backyard. The fencing costs \$1.95 per yard. She buys  $f$  yards of fencing and pays \$3.50 in tax. If the total cost of the fencing is \$81.50, write an equation to represent the situation.

A.  $3.50f + 1.95 = 81.50$   
B.  $1.95f + 3.50 = 81.50$   
C.  $1.95f - 3.50 = 81.50$   
D.  $3.50f - 1.95 = 81.50$

5. During a one-hour episode of Numb3rs, the entertainment portion lasted 15 minutes longer than 4 times the advertising portion. If  $a$  represents the time spent on advertising, write an equation to represent the situation.

A.  $4a + 15 = 60$   
B.  $4(a + 15) = 60$   
C.  $a(4a + 15) = 60$   
D.  $a + (4a + 15) = 60$

6. Karen works for \$6 an hour. A total of 25% of her salary is deducted for taxes and insurance. She is trying to save \$450 for a new car stereo and speakers. Write an equation to represent how many hours Karen must work to take home \$450 if she saves all of her earnings.

A.  $6h - 0.25(6h) = 450$   
B.  $6h - 0.25h = 450$   
C.  $6(0.25h) = 450$   
D.  $450 + 6h = 0.25(6h)$