

## PROBLEM SOLVING ON TAKS

Below are examples that test problem solving skills in multiple choice format. Try solving the problems before looking at the solutions. (Cover the solutions with a piece of paper.) Then check your solutions against the ones given.

1. The pilot of a plane that is 800 miles from an airport is told that he cannot land for 2 hours. At what average speed should the plane fly to arrive at the airport in 2 hours?

- A 300 mph
- B 400 mph
- C 600 mph
- D 800 mph

### Solution

Because the problem involves flying a given distance in a given amount of time, use the distance traveled formula,  $d = rt$ . Substitute 800 for  $d$  and 2 for  $t$ , then solve for  $r$ .

The correct answer is B.

- (A)
- (B)
- (C)
- (D)

2. Five runners are entered in a race. Which expression gives the number of possible arrangements in which the runners can come in first, second, and third place?

- F  $3 \times 2 \times 1$
- G  $5 + 4 + 3$
- H  $5 \times 4 \times 3$
- J  $5^3$

### Solution

There are 5 runners who could come in first. Once the first-place runner is decided, there are 4 runners who can come in second, then 3 runners who can come in third. Calculate  $5 \times 4 \times 3$  to find the number of possible arrangements.

The correct answer is H.

- (F)
- (G)
- (H)
- (J)

3. If the variables  $x$  and  $y$  represent integers and  $xy = 24$ , then which of the following could NOT be true?

- A  $x = 6$
- B  $x < y - 10$
- C  $y < 0$
- D  $x = y$

### Solution

There is no integer which when multiplied by itself equals 24. So,  $x$  cannot equal  $y$ .

The correct answer is D.

- (A)
- (B)
- (C)
- (D)

4. A square parcel of land has an area of  $a$  square feet. Which expression gives the perimeter of the land?

- F  $\frac{a}{4}$
- G  $\sqrt{a}$
- H  $4 \cdot \sqrt{a}$
- J Not here

### Solution

The perimeter of the square parcel of land is 4 times its side length. Each side of the square has a length of  $\sqrt{a}$ , so the perimeter is  $4 \cdot \sqrt{a}$ .

The correct answer is H.

- (F)
- (G)
- (H)
- (J)