Properties of Perfect Squares

A. Choose the correct answer:

1. A perfect square always has an even number of zeros at the end if it ends in zeros. Which of the following is a perfect square

a) 400 b) 300

c) 600 d) 200

2. Which of the following cannot be the unit digit of a perfect square

a) 1 b) 5

c) 2 d) 9

3. The number of digits in the square of a number having n digits is

a) n b) 2n

c) 2n or 2n—1 d) $\frac{n}{2}$

4. If a number ends in 5, then its square ends in

a) 0 b) 25

c) 5 d) 50

5. A perfect square number has _____ number of prime factors when counted with multiplicity

a) Even b) Odd

c) Prime d) Cannot be said

B. Write the Missing Terms to Complete the Sentences:

1. A perfect square can never have _____ as its unit digit.
2. The square of an odd number is always an _____ number.
3. The square of a number ending in 1 will end in _____.
4. A perfect square will always have either _____ or _____ number of digits.
4. The square of a number divisible by 3 is also divisible by _____.

C. Figure out the answers to these questions:

1. Check whether 9801 is a perfect square without finding the square root.
2. Find the property of unit digit for perfect squares using examples.
3. If the square of a number ends with 6, what can you say about its unit digit.
4. Find the least number that must be subtracted from 200 to make it a perfect square.

5. List all the possible unit digits of perfect squares between 1 and 1000.

D. Mark each sentence with a True (✓) or False (✗):

1. A perfect square can end with the digit 7. _____
2. The product of two perfect squares is always a perfect square. _____
3. 841 is a perfect square and its square root is an odd number. _____
4. A perfect square of an even number is always even. _____
5. A number ending in 2 can be a perfect square. _____

E. Challenge yourself with these questions:

1. Find the square of the smallest 2-digit number.
2. Write two properties of a perfect square related to prime factorization.
3. Find the smallest number which when multiplied by 18 gives a perfect square.
4. Can a number ending in 8 be a perfect square Give reason.
5. Find the least number that must be added to 645 to make it a perfect square.