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**Online Homework**

**Focused Exercises for Math SAT**

**Skill Set 29: Prime Numbers**

Many of the problems in this exercise set came from The College Board, writers of the SAT exam.

1. If  $p$ ,  $r$ , and  $s$  are three different prime numbers greater than 2, and  $n = p \times r \times s$ , how many positive factors, including 1 and  $n$ , does  $n$  have?
2. How many integers greater than 20 and less than 30 are each the product of exactly two different numbers, both of which are prime?
  - (A) Zero
  - (B) One
  - (C) Two
  - (D) Three
  - (E) Four
3. If  $p$  is a prime number greater than 3, which of the following is NOT a factor  $6p$  ?
  - (A)  $p^2$
  - (B)  $6p$
  - (C)  $3p$
  - (D)  $2p$
  - (E) 3
4. If  $n > 1$  and each of the three integers  $n$ ,  $n + 2$ , and  $n + 4$  is a prime number, then the set of three such numbers is called a "prime triple." There are how many different prime triples?
  - (A) None
  - (B) One
  - (C) Two
  - (D) Three
  - (E) More than three
5. What is the least positive integer that is the product of 3 different prime numbers greater than 2 ?
  - (A) 27
  - (B) 45
  - (C) 63
  - (D) 75
  - (E) 105