**DIRECTIONS:**Solve each problem, choose the correct answer, and then fill in the corresponding oval on your answer document.
Do not linger over problems that take too much time. Solve as many as you can; then return to the others in the time you have left for this test.
You are permitted to use a calculator on this test. You may use your calculator for any problems you choose, but some of the problems may best be.

1. A car averages 27 miles per gallon. If gas costs $4.04 per gallon, which of the following is closest to how much the gas would cost for this car to travel 2,727 typical miles?

**A.** $  44.44
**B.** $109.08
**C.** $118.80
**D.** $408.04
**E.** $444.40

2. When *x* = 3 and *y* = 5, by how much does the value of 3*x*2 – 2*y* exceed the value of 2*x*2 – 3*y* ?

**F.**  4
**G.** 14
**H.** 16
**J.** 20
**K.** 50

**3.** What is the value of *x* when 2*x* + 3 = 3*x* – 4 ?

**A.**  –7
**B.** 
**C.**   1
**D.** 
**E.**   7

4. What is the greatest common factor of 42, 126, and 210 ?

**F.**   2
**G.**   6
**H.** 14
**J.** 21
**K.** 42

**Correct Answers**

1. **The correct answer is D**. If you divide 2,727 miles by 27 miles per gallon you will get the number of gallons:  = 101.
Then, multiply the number of gallons by the cost per gallon: 101(4.04) = 408.04.
This gives the cost of gas for this car to travel 2,727 typical miles.
2. **The correct answer is G.**
When you use *x* = 3 and *y* = 5 in the given expressions,
3*x*2 – 2*y* = 3(3)2 – 2(5) = 27 – 10 = 17 and 2*x*2 – 3*y* = 2(3)2 – 3(5) = 18 – 15 = 3.
Then subtract 3 from 17 to get 14.
3. **The correct answer is E.**

You can solve this problem by first subtracting 2*x* from each side of the equation to get 3 = *x* – 4.
Then add 4 to each side, so *x* = 7.

1. **The correct answer is K** since it is the largest number that is a factor of all three numbers given. You can find the greatest common factor by writing out the prime factorization of all three numbers, and then taking each of the common prime factors to the lowest power that appears for that factor:
42 = 2 × 3 × 7; 126 = 2 × 32 × 7
and 210 = 2 × 3 × 5 × 7.
So the greatest common factor is 2 × 3 × 7 = 42.