**1.** Doreen's speed = 

Jessie's speed = 4 times Doreen’s speed=  **C**

**2.** Jessie used 100%-20%=80% of her gas. If the total amount of gas she starts with is x, then .8x=240.

. . Since she has already driven 240 miles, she can drive 300-240=**60** more before she runs out of gas. **B**

**3.** Draw a factor tree for each number to figure out the prime factorization of each number.

350=



Because the least common multiple of two numbers is the smallest number that both numbers can divide into, we pick the largest exponent of each prime factor that appears at least once in the prime factorization of the numbers.

LCM=. The sum of the digits of 2800 is 2+8+0+0=**10**. **B**

**4.** Only III and IV are *true for the distributive property*.

I is NOT a true statement. . .

II is a true statement, but NOT for the distributive property. It illustrates the commutative property. **B**

**5. .** Kathryn saves $0.39, so she ends up paying . **C**

**6. **.  **A**

**7. **. x=. **A**

|  |  |  |  |
| --- | --- | --- | --- |
| **$20** | **$10** | **$5** | **$1** |
| 1 | 0 | 0 | 0 |
| 0 | 2 | 0 | 0 |
| 0 | 1 | 2 | 0 |
| 0 | 1 | 1 | 5 |
| 0 | 1 | 0 | 10 |
| 0 | 0 | 4 | 0 |
| 0 | 0 | 3 | 5 |
| 0 | 0 | 2 | 10 |
| 0 | 0 | 1 | 15 |
| 0 | 0 | 0 | 20 |

**8. 10** ways are listed. **C**

**9.** without parentheses is . Now, using the order of operations, .  **D**

**10.** There are six ways of throwing doubles (two 1s, two 2s,..., two 6s) and total combinations of numbers on the two dice. Therefore, the probability of throwing doubles once is . Thus, the probability of throwing doubles three times in a row is . **D**

**11.** 4Ω3=. **C**

**12.** Set the price of the rent as x. 56+x=5x. 56+x-x=5x-x. 56=4x. . **A**

**13.** Plug the x-value and y-value for each point into the equation 7x+10y=29 to see if a true statement results. For example, plugging in (2,) into the equation yields: . 29=29, a true statement, so the point (2,) is on the line. **B**

**14.** . **D**

**15.** =distance

t=the time it takes Joanna to catch Angela

200t=160(t+2). 200t=160t+320. 40t=320. t=**8**. **B**

**16.** 7x+5=4(8+x).

7x+5=32+4x.

3x+5=32.

3x=27.

x=**9**. **A**

**17.** Since for the formula, t is in minutes, we must convert half an hour to minutes. Plug in t=30 minutes into the equation .. **C**

**18.** First find out how many dollars Jessie has at t=20 minutes. .

10% of $723 is equal to , which is the amount of income tax in dollars Jessie would pay if she didn't pay $200. She would save $200-$72.30=$**127.70**. **C**

**19.** If x=the price of Connecticut Avenue, the price of Marvin Gardens can be represented as 3x-80. Since the total price of the two properties is $400, x+3x-80=400. 4x-80=400. 4x=480. x=120. Therefore, the price of Connecticut Avenue is $120. The price of Marvin Gardens is equal to 400 - 120 = $280. The positive difference in price between the two properties is 280-120=$**160**. **D**

**20.** 7x+5y=30. 5y=-7x+30. . . **D**

**21.** = **B**

**22.** Slope=. **A**

**23.** Inequalities work the same way as equations except when dividing or multiplying by a negative number. Remember to switch the sign of the inequality when dividing or multiplying by a negative number (we must switch the sign in this problem because we divide by -4).. . . . . **B**

**24.** **Jamie Nilay**

**First bid** x 

**Second bid**  

**Third bid** . **D**

**25.** Using only three of the clues given, you can find out who is 7th. The clue that says "Jessie's finish is represented by the number that is neither prime nor composite" tell us that Jessie finished 1st because only the number 1 is neither prime nor composite. The clue that says "Daniel's finish is represented by a perfect cube" tells us that Daniel must have finished 8th because 8 is the only perfect cube besides 1 from 1 to 13 (and we know that Jessie finished 1st). The clue "Doreen finished one place ahead of Daniel" tells us Doreen must have finished 7th. **C**