

December 2014 Rookie Level

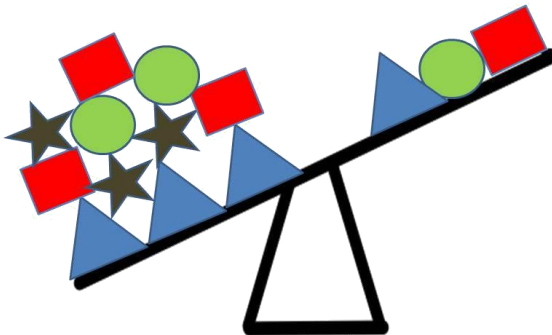
1) Complete the pattern. What is the sum of the three missing numbers? 2, 7, 5, 10, 8, 13, 11, __, __, __

2) Jenny is ordering cans of waffle mix and they costs \$5.19 per can or a 3-pack costs \$13.57. She must also pay \$8 for shipping. She has a \$100 gift card. What is the most number of cans she can buy?

3) In 3 minutes Marvin can saw a log into two pieces. If he cuts at the same rate, how many minutes will it take him to saw the log into twelve pieces?

4) Larry the elf was counting toys in Santa's Shop. He saw that there were some tricycles and some bicycles. He counted 21 seats and 48 wheels. How many bicycles did he count?

5) If 1 square = 3 stars and 1 triangle = 7 stars, and 1 circle = 2 stars, how many stars would need to be added to the right side of the scale to balance the scale?



6) The Johnson family members each brought a \$10 gift for everyone in the family. If there are 10 people in the family how many total dollars were spent on gifts?

December 2014 Rookie Level Answers

1) Complete the pattern. What is the sum of the three missing numbers? 2, 7, 5, 10, 8, 13, 11, ____, ____, ____

49

2) Jenny is ordering cans of waffle mix and they costs \$5.19 per can or a 3-pack costs \$13.57. She must also pay \$8 for shipping. She has a \$100 gift card. What is the most number of cans she can buy?

20

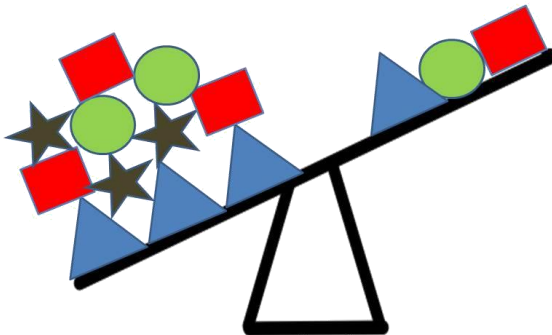
3) In 3 minutes Marvin can saw a log into two pieces. If he cuts at the same rate, how many minutes will it take him to saw the log into twelve pieces?

33

4) Larry the elf was counting toys in Santa's Shop. He saw that there were some tricycles and some bicycles. He counted 21 seats and 48 wheels. How many bicycles did he count?

15

5) If 1 square = 3 stars and 1 triangle = 7 stars, and 1 circle = 2 stars, how many stars would need to be added to the right side of the scale to balance the scale?



25

6) The Johnson family members each brought a \$10 gift for everyone in the family. If there are 10 people in the family how many total dollars were spent on gifts?

\$900

December 2014 Rookie Level Solutions

1) The pattern in this sequence is add 5 subtract 2. The three numbers that fill in the blanks would be 16, 14, and 19.

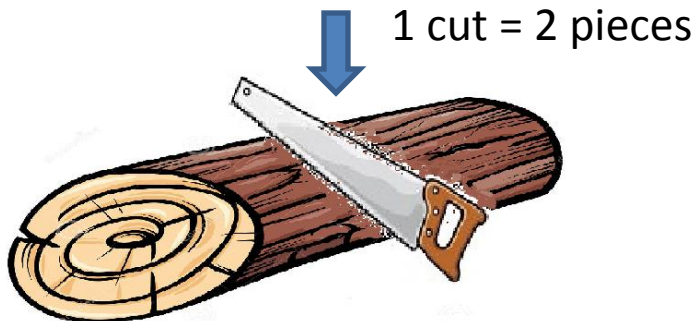
Their sum is $16 + 14 + 19 = 49$

49

2) It is less expensive to buy the 3 pack so she must purchase as many of those as possible. $\$100 \div \$13.57 = 7$. These cost $13.57 \times 7 = 94.99$ which leaves 5.01 change and that is not enough for the \$8 shipping cost. So she must go back to the six 3 packs and work from there. $\$13.57 \times 6 = \81.42 . If she adds the \$8 shipping cost it is \$89.42 and that leaves her $\$100 - 89.42 = \10.58 to spend. She can buy 2 more cans at \$5.19 each or \$10.38 and that will leave her .20¢. She can buy a total of 20 cans.

20

3) The tricky part about this problem is to notice that one cut makes two pieces. So to make 12 logs, it will only take 11 cuts. If it takes 3 minutes to make one cut, then it will take (3 min X 11 cuts) or 33 minutes to cut the 12 logs.


33

December 2014 Rookie Level Solutions

4) One way to solve this is to make a chart. Start with half tricycles (10) and half bicycles (11). This makes the total wheels equal to 52. So, we need to decrease the number of tricycles until you reach 48 wheels. There are 15 bicycles.

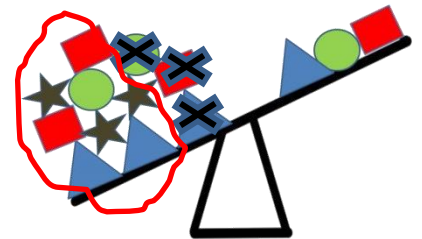
Starting Point
↓

Tricycles	10	9	8	7	6
Bicycles	11	12	13	14	15
Total Seats	21	21	21	21	21
Wheels	52	51	50	49	48

← Keep Total Seats Constant

15

5) The first step would be to see what shapes are the same on both sides of the scale and eliminate those from the left side. So if we eliminate a triangle, circle, and square from the left, we have 3 stars, 2 triangles, 2 squares, and 1 circle remaining. Since a triangle equals 7 stars, we can count the 2 triangles as 14 stars. A square equals 3 stars, so we can count the 2 squares as 6 stars. A circle equals 2 stars, so we can count those 2 stars. So we would need to add 3 stars + 14 stars + 6 stars + 2 stars = 25 stars


25

6) The Johnson family members each brought a gift for everyone in the family. There are 10 people in the family so each person bought a gift for all the other 9 people. 10 people x 9 gifts each = 90 gifts. 90 gifts x \$10 = \$900

\$900