1. Since Jack and his mother were really poor, they sold everything they had except their cow, Milky White. Milky White produces milk every morning for Jack and his mother to sell at the market. If Milky White produces 2 buckets of milk everyday, how many buckets of milk can she produce in two weeks?

**(A) 2        (B) 7        (C) 14        (D) 28        (E) NOTA**

2. One day, Milky White stopped producing milk! Jack and his mother were very sad since the cow was all they had. To let Milky White get better, Jack needs a specific amount of medicine. Solve the expression to see how many ounces of medicine he should give Milky White:

(9 x 2 - 12) + 62.

**(A) 6        (B) 9        (C) 10      (D) 12      (E) NOTA**

3. Even after being given the medicine, Milky White’s problem is still unknown… For this reason, Jack decides to sell the cow at the market. On the way to the market, Jack comes across a butcher. The butcher had a long beard in the shape of a triangle. If the base of the triangle is 6 inches and has a height of one foot, what is the area of the beard in square inches?

**(A) 12 inches²    (B) 24 inches²    (C) 36 inches²    (D) 48 inches²    (E) NOTA**

4. The butcher pulls out 5 strange looking beans from his pocket and shows them to Jack. These beans were strangely very flat and all different shapes and regular polygons. The figures below are in the

shapes of the beans: 

If the radius of the circle is one cm. and the length of the sides of the other polygons are two cm., what is the total perimeter of the 5 beans. Note: figures are not to scale. Let =3.14.

**(A) 35.14    (B) 35.28     (C) 38.14     (D) 38.28    (E) NOTA**

5. The butcher tells Jack if he plants these beans overnight, they will grow and reach the sky by the next morning! The butcher offers Jack the beans for Milky White and because Jack is too nice to say no, Jack trades his cow for the five beans. Say that each of these beans costs $5 at the market and Milky White could have been sold at the market for $101. If Jack sold Milky White at the market, how much more money could he have made?

**(A) $76    (B) $96    (C) $106    (D) $126    (E) NOTA**

Use the following information to solve question 6-7.

The butcher offers Jack some extra beans. In order to receive them, Jack has to find the fifth two-digit prime number and the fifth three-digit prime number (first three digit prime is 101).

6.  The butcher says, “The sum of those two numbers will be the amount of extra beans I will provide”. However, Jack makes a careless mistake and multiply them instead. How many beans does Jack think the butcher offered?

**(A) 126      (B) 136    (C) 2499    (D) 2599     (E) NOTA**

7. How many extra beans did the butcher actually offer?

**(A) 132    (B) 136    (C) 142    (D) 158     (E) NOTA**

8. Jack goes home and shows his mother the beans he got. Jack’s mother was very disappointed in Jack. She got so angry that she threw the beans outside the window at an impressive speed of 83 MPH! Suppose Jack’s mother also throws him out of the window at a speed of 67 MPH. How much faster did Jack’s mother throw the beans in miles per hour?

**(A) 14    (B) 18     (C) 22     (D) 26     (E) NOTA**

9. His mother yells at Jack to go to his room and so he does. Jack becomes very sad and cries in front of his mother. He cries for 10 minutes before going to his room. Assume he cries 14 ounces of tears the first minute,24 ounces the second minute, 34 the third minute, and so on, how many ounces of tears did Jack cry overall?

**(A)  454     (B) 504     (C) 554     (D) 604     (E) NOTA**

10. Jack goes to his room and suddenly has the urge to attend a math competition, but he is not sure if he can afford it. He has 641 quarters, 1234 nickels, and 5269 pennies. The math competition costs 275 dollars. If Jack also wants to buy lunch, which costs 5 dollars, can he afford lunch as well as the registration?

**(A) Yes, he can afford both.**

**(B) He can afford the registration, but not the lunch.**

**(C) He cannot afford to go.**

**(D) He cannot afford to go, but he can buy lunch at his favorite restaurant, Chiles Cafeteria.**

**(E) NOTA**

11. After thinking about if he could afford the math competition, Jack gets very tired and falls asleep. In his dream, he sees 4 Justins, 6 Jasons, 3 Jaewons, 8 Jamies, 2 Joannas, 2 Julias, and 3 Jessicas. Jack randomly selects one person to be his best friend. What is the probability that he chooses a Jason (express your answer as a fraction in **simplest form**)?

**(A) 17         (B) 314     (C) 328     (D) 628     (E) NOTA**

12. The next morning Jack wakes up and for some reason, it is dark in his room. Confused, he looks outside and sees that the sun is shining brightly. However, there is a giant beanstalk which stretches up as far as his eyes can see! He steps outside and begins to climb the beanstalk. Assume the beanstalk is shaped as a cylinder with radius of 43 meters, and height 12333 times the radius. If Jack is half way up the beanstalk, how far has he climbed, expressed in lowest terms?

**(A) 16411  m         (B)16433  m        (C) 8211  m        (D) 8233  m    (E) NOTA**

13. When Jack reaches the top of the beanstalk, a beautiful maiden appears in front of him and greets him. Say that they are on a coordinate plane with Jack at the origin (0, 0) and the maiden on (3, 4), how many units away is Jack from the maiden?

(Hint: use the pythagorean theorem- a2+b2=c2 where c is the hypotenuse of the right triangle )

**(A) 5 units    (B) 4 units    (C) 3 units    (D)     units    (E) NOTA**

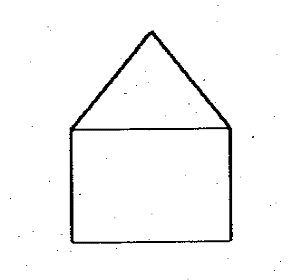
14. The Giant is eating a huge piece of chicken with a volume of 1011 m³. What is the volume of the piece of chicken in cm3?

**(A) 101100    (B) 10110000     (C) 1011000000**

**(D) 101100000000 (E) NOTA**

15. The great Giant weighs 890 lbs while his wife weighs **** times the weight of the Giant. How many pounds does she weigh in pounds?

**(A) 389 (B) 390    (C) 1780 (D) 143290   (E) NOTA**

  
  
16. As Jack drew near the castle, he realizes that the castle is

shaped like an equilateral triangle on top of a square. If a side

length of the equilateral triangle is 1000 km, what is the area of the

square in square kilometers? (picture not to scale)

**(A) 1000000    (B) 1000000 (C) 4000 D) 2000     (E) NOTA**

17.  “Fee, fi, fo, fum, I smell the blood of an Englishman; Be he alive, or be he dead, I’ll grind his bones to make my bread!” Oh no! Jack is trying to run away from the Giant as quickly as possible but the wind is blowing against him. Jack is 172 feet away from the exit and the wind pushes him back 2 feet for every 6 feet he goes forward. How many **inches** will Jack be pushed back before he reaches the exit?

**(A) 43        (B) 84        (C) 82    (D) 1032         (E) NOTA**

18.  Jack is nice enough to share his bags of gold he has stolen from the Giant with 5 of his friends; Cayle, Cynthia, Allison, Jamie, and Brian.  Initially, everyone gets the same amount of gold but because Jack likes Cayle the most, he decides to take 2 bags of gold from everyone else and give them to Cayle. If Jack originally had 72 bags of gold, how many bags of gold did Jamie get?

**(A) 14.4 (B) 24     (C) 20         (D) 76.4      (E) NOTA**

19.  Using all of his gold, Jack buys a GINORMOUS cube shaped cake with a side length of 20 ft. for his girlfriend Cayle. It takes 3 minutes for Cayle to eat a piece of cake with a volume of 2 ft³. How many **hours** will it take her to eat the whole cake?

**(A)  12000        (B) 8000        (C)  4000        (D) 200        (E) NOTA**

20.  While Jack is waiting for his girlfriend to finish the cake, a math question pops up in his head : The quotient of two numbers is 9 while their sum is 330. Find the product of the two numbers and subtract the smallest digit from biggest digit. What is the answer to this question?

**(A) 9801    (B) 297        (C) 9        (D) 8        (E)NOTA**

21. Jack goes back up the beanstalk to get more gold since he used it all up buying the cake. He successfully gets more gold but on the way back, he drops a piece of gold the first minute, 3 pieces of gold the second minute, 5 pieces of gold the third minute. If takes Jack 11 minutes to safely escape, how many pieces of gold does Jack drop at the 11th minute?

**(A) 22        (B) 21        (C) 11        (D) 5        (E) NOTA**

22. Because Jack escapes safely, he decides to celebrate and hold a party with the officers of Mu Alpha Theta: Jamie, Arya, Katherine, Cayle, Cynthia, Sarah, Justin, Jamie, Joanna, and Alberic. They play a game to see who can solve a math question the fastest! The question is what is

78 + [(785 + 23) + 3 x 9² ] x 0?

**(A) 0        (B) 78         (C) 892    (D) 970    (E) NOTA**

23. The party got boring after a while, so Jack decides to invite everyone in Mu Alpha Theta! Arya and Sarah decide to have a popularity contest since so many people showed up. Each person is allowed to vote for one person or for both. Arya and Sarah are not allowed to vote.

If Arya gets 32 votes, Sarah gets 36 votes, and 12 people voted for both of them, how many people were at the party if everyone voted?

**(A) 56         (B) 58        (C) 68        (D) 80        (E) NOTA**

24. If the party started at 11:43 PM. and ended at 3:21 AM., how many seconds did the party last?

**(A) 278    (B) 13080    (C) 15720     (D) 16680     (E) NOTA**

25. Meanwhile, Jack’s mother is worried because Jack was not back by midnight. She wants to call Jack but she forgets his number. If his number is divisible by 8, what could be Jack’s phone number?

**(A) 8502280102    (B) 8504370877    (C) 8501123456    (D) 8506918169    (E)NOTA**

26. Jack goes home and remembers that he hid the hen that he stole from the Giant’s castle. This was no ordinary chicken; it laid golden eggs! The hen can only lay golden eggs that weighs 1 pound, 2 pounds, and 3 pounds. If there are five one pound eggs, seven two pounds egg, and two three pounds egg, how heavy are the eggs in total?

**(A) 20 lbs.        (B) 25 lbs.        (C) 26 lbs.        (D) 27 lbs.    (E) NOTA**

27. The Giant is furious and begins to climb down the beanstalk to get his hen back. However, Jack quickly chops the bottom of the beanstalk. The beanstalk falls and hits a building, forming a right triangle.  If the building is 4000 ft. tall and 3000 ft. away from the beanstalk, what is the length of the beanstalk? (Hint: refer to question 13)

**(A) 3000    (B) 4000    (C) 5000    (D) 6000    (E) NOTA**

28. After chopping off the beanstalk, Jack sees a math expression written on the axe and simplifies it correctly:  What was Jack’s answer?

**(A)     (B)  (C)     (D)          (E) NOTA**

29. Because Jack chopped the bottom of the beanstalk, the Giant fell. As the Giant fell, he thought of an incredible physics problem: How much force would he hit the ground if he has a mass of 1610 kg, and is going down at an acceleration of 10 m/s²? (Hint: Force = Mass x Acceleration)

**(A) 0        (B) 10         (C) 161    (D) 16100        (E) NOTA**

30. The Giant is dead! Jack has nothing to fear now! In what year did the earliest known story of Jack and the Beanstalk first appear in print (moralized version)?

**(A) 1640    (B) 1807     (C) 1916    (D) 2015    (E) NOTA**