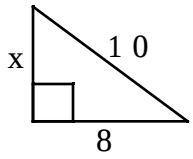
2001 Mount Rainier Math Invitational
Sixth Grade Individual Test

Reduce all fractions and answers may be left in terms of π or use 3.14 for π. You will have 35 minutes for this test.

Questions 1-20 are worth 2 points each

1. What is 3^2 x 9^5 x 4^2 x 7 x 13 multiplied by zero?

2. 

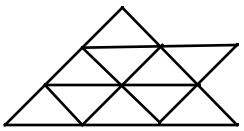
Find x.

3. How many 2 letter words can you make from the word "SEVEN"?

4. Evaluate: $\frac{1}{2}+\frac{1}{3}+\frac{1}{6}$?

5. Eric bakes a cake. The probability that the cake will be good is $\frac{3}{201}$. What is the probability that the cake won't be good?

6. Britney Spears goes to the mall to buy a shirt, pants and a pair of shoes. If she finds 9 shirts, 5 pants and 2 pairs of shoes, how many different outfits could she choose?

7. How many triangles are in the figure? 

8. If you flip a coin 7 times, what is the probability that on the seventh flip, it will be heads?

9. What is the sum of the first 20 positive integers?

10. What is 6 x 5 x 4 x 3 x 2 x 1 – 5 x 4 x 3 x 2 x 1 ?

11. How many lines of symmetry does an equilateral triangle have?

12. If Grand Master Eric has a party with 9 of his friends and all ten of them shake each other's hand once, how many handshakes take place?

13. Jon plays "Phoenix" for 12 hours, and loses 97.5 points every hour; how many points will he have if he started with 2,000 points?

14. In a running race, if Jane is 50 feet behind George and Jane is running 10 feet every 2 seconds and George is running 10 feet every 4 seconds (because he is tired), how seconds will it take Jane to catch up to George?

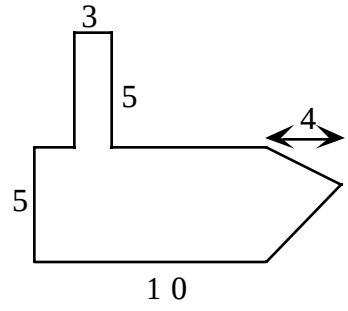
15. If there are 12 red socks and 6 blue socks in the drawer, and 1/6 of the red socks have polka dots, what is the probability that I pick a red sock with polka dots?

16. There are 12 moogles for every 1 chocos, there are 9 chocos to one mog, and there are 5 mogs to one chocobo. How many moogles are in 2 chocobos?

17. If you reach into a bag of 8 apple, 9 cherry and 7 grape lollipops, what is the probability that you get an apple flavored pop on the first try?

18. If Eric runs 15 mph and Jon walks 3 mph, how fast does Ryan need to run in order to be exactly halfway between Jon and Eric after 1 hour?

19. What is the area of the following figure?



20. What is (16!) divided by (14!)?

Questions 21-30 are worth 3 points each

21. Frank collected trash in the town of Wallabee. Everyone had their trash picked up but only 1/3 of them paid for recycling. Frank received $10 for trash pickup and $20 for recycling pickup. If Frank received $17,650, how many people lived in Wallabee?

22. Ms. Steven was very upset when her class average came out to be C on her history quiz. If 12 students had F's, 6 had C's and the rest had A's, how many students are in Ms. Steven's class?

23. If 5 chickens lay 6 eggs in two days, how many days will it take 10 chickens to lay 30 eggs?

24. What is the 11^{th} number in this sequence, 1, 1, 2, 3, 5, 8, ... ?

25. Mary had to drive from Fairyland to Roboville as fast as she could. They were 2000 miles apart. If she could only go 10 hours a day at 40 miles per hour, how many days would it take her?

26. Pikachu climbs a tree. Every day he goes up 5 feet, every night he slides down 6 inches. If the tree is 14 feet high, how many days will it take for him to get to the top?

27. Martha was going for the world record for the greatest number of people on a dance floor. She figured she could squeeze each person into a $1\frac{1}{2}$ square foot area. If the dance floor is 27 feet wide and 93 feet long, how many dancers can she fit on the floor?

28. If $\frac{n!}{(n-1)!} = 4$, what is n?

29. If $6x + 5x = -5 + 8x$, find x ?

30. When Rapunzel was up in her tower, her hair wasn't instantly long. Each year it grew 12 feet (it was enchanted), but each month she trimmed 1 inch of split ends. If her tower was 231 feet high, how many years did it take for her hair to touch the ground?