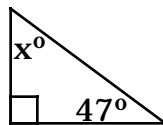


**2001 Mount Rainier Math Invitational
Fifth Grade Individual Test**

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

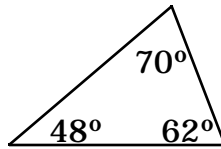
1. Find the sum: $3 + 8 + 9 + 14$
2. If I have \$75, how many \$15 whatsmahoozits can I buy?
3. If a fair six-sided die is rolled, what is the probability that a 5 is rolled?
4. How many degrees are in the sum of all three angles in a triangle?
5. If John watches TV two hours per day from Monday through Friday and two and one-half hours each on Saturday and Sunday; how many hours of TV does John watch each week?
6. What is $10 \times 9 \times 8 \times 7 \times 6 \times 5 \times 4 \times 3 \times 2 \times 1 \times 0$?
7. Evaluate: $(3000 - 1000) / 2 + 998$.
8. If from a standard deck of 52 cards, 1 is lost, how many cards can be given to each of three players?
9. What is x in the following figure?



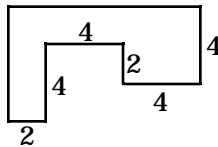
10. Find the sum of the first 10 positive integers: $1 + 2 + 3 + 4 + 5 + 6 + 7 + 8 + 9 + 10$.
11. What is the surface area of a cube with a side length equal to 5?
12. James' younger brother is 5 years old. In 10 years, James will be 4 times as old as his brother is now. How old is James now?

13. If one candy bar has 800 calories and I eat three-fourths of one bar and one-half of another, how many calories have I eaten?
14. Evaluate: $3b-12$, when $b=3$.
15. Multiply the two fractions: $\frac{3}{5} \times \frac{1}{2}$.

16. What type of triangle is this?



17. Solve for y : $3y+ 4 = 5y$
18. In a bag, I have 4 blue marbles, 7 black marbles, and 2 orange marbles. What is the probability of randomly drawing a marble that is not orange?
19. Find the perimeter of the figure:



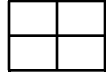
20. Multiply the decimals: 5.35
 $\times 2.4$

Questions 21- 30 are worth 3 points each

21. A brick walkway 3 feet wide goes around an outdoor pool 10 feet wide and 30 feet long. How many square feet of walkway are there?
22. If there are 3 sets of twins in a room and everyone shakes hands with everyone else except their twin, how many handshakes take place?
23. If Bonnie averaged 60% on her first three tests, what does she need on her last test to have an overall average of 70%?

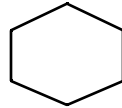
24. If today is Friday, what day was 328 days ago?

25. How many rectangles are in the following figure?



26. The probability that Mr. Smith will go to Smallville today is $\frac{1}{3}$. If he goes to Smallville, the probability he visit Tiny Park is $\frac{1}{4}$. If he visits Tiny Park, the probability he will buy a “mini-dog” is $\frac{1}{5}$. What is the probability that Mr. Smith will buy a mini-dog in Tiny Park in Smallville today?

27. How many diagonals can be drawn in a hexagon?



28. How many seconds were there in the year 1999?

29. Eric has \$2.50 in change. What is the maximum number of coins he can have if he has no more than 17 pennies and no more than 11 nickels?

30. A triangle has a base of 9 and a height of 6. If I double all the dimensions of this triangle, what is the area of the new triangle?

**2001 Mount Rainier Math Invitational
Fifth Grade Team Algebra Test**

Reduce all fractions and answers may be left in terms of π or use 3.14 for π . You will have 20 minutes for this test.

Questions 1- 5 are worth 2 points each

1. The Woodland Park Zoo contains both kangaroos and elephants. If there are a total of 46 eyes and 58 legs, how many elephants are there?
2. The ages of three children add up to 37. The oldest child is three years older than the middle child and twice as old as the youngest. What is the age of the middle child?
3. A farmer can sell an apple for 50¢, a pear for 60¢ and a pineapple for \$1.00. How much money can she make by selling 100 pieces of fruit if $\frac{2}{5}$ of pieces are apples, $\frac{1}{5}$ are pears and the rest are pineapples?
4. Evaluate: $3x + 2x + 5(x-1)$ when $x=2$.
5. Find x if $9x + 7 = 25$.

Questions 6- 10 are worth 3 points each

6. I have 100 digital clock radios. At exactly 5:01, all the clocks are on time. What is the sum of the digits on all the clocks?
7. Sally watched TV for 3 hours. The ratio of the time viewing programs to the time viewing commercials was 2:1. Each commercial lasted 40 seconds. How many commercials did Sally see in the three hours of TV?
8. If $z=5$, $x=4$ and $y=3$, what is $zx + zy + xy$?
9. What is the next number in the sequence: $4, -2, 1, -\frac{1}{2}, \frac{1}{4}, \underline{\hspace{1cm}}$?

(turn over)

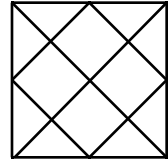
10. If there are 4 pips to 1 pop and 5 pops to 2 gags, then how many pips are there in 5 gags?

**2001 Mount Rainier Math Invitational
Fifth Grade Team Geometry Test**

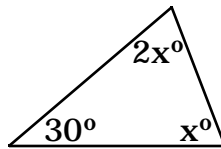
Reduce all fractions and answers may be left in terms of π or use 3.14 for π . You will have 20 minutes for this test.

Questions 1- 5 are worth 2 points each

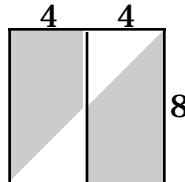
1. How many squares are in this figure ?



2. Find x .



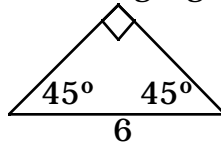
3. What is the sum of the measures of the angles in a pentagon?
4. What is the area of the shaded figure?



5. What is the total length of the edges in a cube with side length equal to 3?

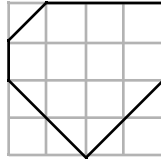
Questions 6- 10 are worth 3 points each

6. What is the area of the isosceles triangle given below?

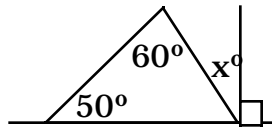


(turn over)

7. What is the area of the following figure, if each of the small squares have area 1?



8. If the circumference of a circle is π times 10, what is its area?
9. What is the value of x ?



10. How many of these statements are true?
- All rectangles are squares.
 - The measure of each angle in an equilateral triangle is 45 degrees.
 - A scalene triangle has two sides equal.
 - Both sets of opposite sides in a trapezoid are parallel.

**2001 Mount Rainier Math Invitational
Fifth Grade Team Pressure Round**

Reduce all fractions and answers may be left in terms of π or use 3.14 for π . You must turn in an answer to a problem at 3, 6, 9, 12 and 15 minutes. The first answer turned in is worth 3 points, the second 4 points, ..., and the fifth is worth 7 points.

1. I can get 3 chocolate bars for 1 dollar, 7 bars for 2 dollars, or 11 bars for 3 dollars. What is the most number of chocolate bars I can get for \$10?

2. Each Narf is worth 7 Blums.
Each Blum is worth 4 Mzzkts.
Each Mzzkt is worth 2 Heehaws.
Each Heehaw is worth 5 Snumfs.
If I have 3 Narfs, how many Snumfs can I get?

3. Evaluate: $\frac{3xy - x}{y}$, if $y=2$ and $x=3$.

4. In a deck of 52 cards, what is the probability of drawing either a black card or a king on the first draw?

5. I can mow my lawn in 3 hours while John takes only 1 hour. If we work together, what fraction of the lawn will I mow?

2001 Mount Rainier Math Invitational
Fifth Grade Team Who Wants to be a Mathematician

Any wrong answer and you will lose any points past the last "safe zone" (after questions 4 and 8). You may use up to two Lifelines by putting "LL" as the answer for a question. There is no credit for that question but it does not count as a wrong answer. You will have 20 minutes for this test.

Questions 1- 4 are worth 1 point each

1. How many sides does a quadrilateral have?
A) 4 B) 400 C) 7 D) 2
2. What is 12 times 15?
A) 1215 B) 3 C) 180 D) 150
3. How many prime numbers are even?
A) 100 B) infinite C) 3 D) 1
4. Reduce the fraction $\frac{42}{72}$ to lowest terms.
A) $\frac{84}{144}$ B) $\frac{7}{12}$ C) $\frac{72}{42}$ D) $\frac{4}{7}$

Questions 5- 8 are worth 2 points each

5. What is the sum of the measures of the angles in a rectangle?
A) 360° B) 180° C) 300° D) 90°
6. The product of two numbers is 27 and their sum is 12. What is the larger of these two numbers?
A) 8 B) 9 C) 3 D) 7
7. Solve for x: $9x + 7 = 7$
A) 1 B) 0 C) 10 D) 3
8. At Sylvester Middle School, there are six math teachers and 200 students taking math. The most number of students allowed in one class is 35. What is the least number of students one teacher could have?
A) 25 B) 10 C) 15 D) 40

(turn over)

Questions 9- 11 are worth 3 points each

9. How many positive factors does the number 80 have?
A) 8 B) 2 C) 12 D) 10
10. In how many ways can I arrange the letters in the word "PANAMA"?
A) 6 B) 720 C) 120 D) 240
11. What is the probability of getting exactly one head in three tosses of a fair coin?
A) 3 B) $\frac{1}{3}$ C) $\frac{3}{8}$ D) $\frac{1}{8}$

Question 12 is worth 4 points

12. A fireman places a 25 ft ladder 7 ft away from the side of a house in order to reach the window. Assuming that the wall of the house is perpendicular to the ground, how high is it from the base of the house to the top of the ladder?
A) 23 B) 24 C) 20 D) 20