1. John meant to divide a number by 2, but he was careless and subtracted 2 from the number instead. He got an answer of 22. What would his answer have been had he actually divided by 2 instead of subtracting 2?

1. _____

2. There are 400 pages in Sheila's favorite book. The average number of words per page in the book is 300. If she types at an average rate of 40 words per minute, how many hours will it take to type the 400 pages of the book?
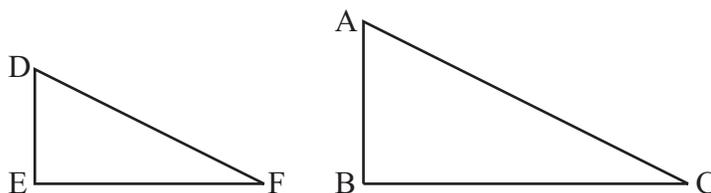
2. _____ hours

3. What is the result when the following set's largest number is divided by its smallest number?

$$\left\{ 0.47, \frac{1}{6}, 1\frac{1}{2}, 0.\overline{3} \right\}$$

3. _____

4. Triangle DEF is similar to triangle ABC. If DE = 6, EF = 12 and BC = 18 units, what is the length of segment AB?

4. _____ units

5. For the eight counties listed below, what was the median number of students in 2005?

5. _____ students

Number of Students per County

COUNTY	2001	2002	2003	2004	2005
Aiken	124	141	130	143	136
Bamberg	17	15	15	14	11
Barnwell	25	22	26	28	29
Berkeley	583	557	554	553	524
Calhoun	15	12	10	18	11
Cherokee	19	13	18	13	19
Chesterfield	46	18	13	22	29
Colleton	64	49	52	46	41

6. Adam rolled two standard, six-sided dice once. What is the probability that he did not roll a prime number on either die? Express your answer as a common fraction.

6. _____

7. A floor decoration is a circle with eight rays pointing from the center. The rays form eight congruent central angles. One of the rays points due North. What is the measure of the smallest angle formed between the ray pointing East and the ray pointing Southwest?
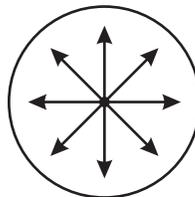
7. _____ degrees

8. If the current time is 7:03 a.m. on a 12-hour clock, what time will it be in 553 minutes?

8. ____ : ____ p.m.

9. A set of five distinct positive integers has a mean of 1000 and a median of 100. What is the largest possible integer that could be included in the set?

9. _____

10. A convex pentagon has interior angles with measures $x + 1$, $2x$, $3x$, $4x$ and $5x - 1$ degrees. What is the measure of the largest angle?

10. _____ degrees

11. Alex's uncle paid Alex $5 a week for doing a few minor chores. However, if Alex failed to do all the chores in any week, he did not get paid for that week and he had to give his uncle $7.50 for that week. During the first 52 weeks, Alex failed to do the required chores during two weeks. He started the year with $89, spent $143 on books, and saved the rest of the money he earned by doing chores. How much money did he have at the end of the 52-week period?

11. $ _____

12. A polyomino is a connected collection of unit squares where the unit squares create a continuous path from the first square to the last square. Consecutive squares in the path must share a side. The smallest polyomino that has one hole uses 7 unit squares, as shown. How many unit squares are in the smallest polyomino that has two holes? (A hole is a unit square that is not part of the polyomino but is surrounded on all four sides by squares that are part of the polyomino.)
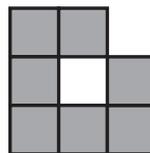
12. _____ unit squares

13. In the figure, each pair of consecutive sides forms a right angle. What is the area of the figure?

13. _____ sq inches

12″

3″

7″

8″

4″

9″
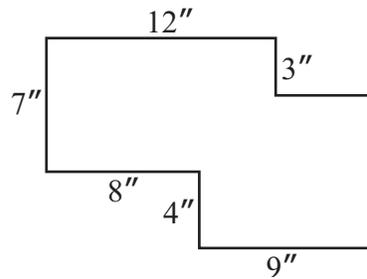
14. A school's band members raised money by selling magazine subscriptions and shirts. Their profit from selling shirts was $5 per shirt minus a one-time $40 set-up fee. Their profit from selling magazine subscriptions was $4 per subscription. They made exactly the same profit from shirts as they did from magazines. They also sold the same number of shirts as magazine subscriptions. How many shirts did they sell?

14. _____ shirts

15. Three pies and four cakes sell for $35 while four pies and five cakes sell for $44.50. What is the cost to purchase one pie and one cake?

15. $ _____

16. A groundskeeper must buy bags of fertilizer. Each bag treats 10,000 square feet of ground and costs $27. The groundskeeper can buy only whole bags of fertilizer. How much will it cost to buy the least number of bags necessary to treat 6000 square yards of ground?

16. $ _____

17. On an old-fashioned bicycle the front wheel has a radius of 2.5 feet and the back wheel has a radius of 4 inches. If there is no slippage, how many revolutions will the back wheel make while the front wheel makes 100 revolutions?

17. _____ revolutions

18. In a sequence of five integers the third integer is the sum of the previous two, the fourth integer is the sum of the previous three and the fifth integer is the sum of the previous four. If the sum of the five integers is 248, what is the third integer in the sequence?

18. _____

19. In right triangle ABC, AB = 10, AC = 6 and BC = 8 units. What is the distance from C to the midpoint of segment AB?

19. _____ units

20. On Claudia's birthday in 2004, her age was four times her brother's age on that day. On her birthday in 2005, her age was three times her brother's age on that day. In what year will Claudia's age, on her birthday, be twice her brother's age on that day?

20. _____

21. Thomas took three 100-point quizzes, and the mean score for the three quizzes was 87 points. If the highest score is taken away, the mean of the remaining two scores would be 83.5 points. If the lowest score is taken away, the mean of the remaining two scores would be 89 points. What is the highest score?

21. _____ points

22. The symmetrical decahedron shown has a two-inch-by-two-inch square as its top face and its bottom face. The isosceles trapezoids forming the other faces are all congruent. What is the total surface area of the solid?
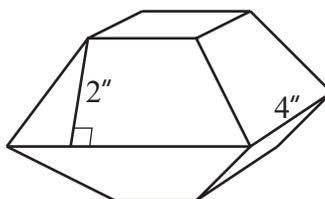
22. _____ sq inches

23. In a group of cows and chickens, the number of legs is 14 more than twice the number of heads. How many cows are there in the group?

23. _____ cows

24. In how many ways can U.S. coins be combined to total 26 cents?

24. _____ ways

25. If only the positive integers from 1 through 49, inclusive, are written on a piece of paper, what is the sum of all the digits that are written on the paper?

25. _____

26. The sum of four numbers w, x, y and z is 64, and $w < x < y < z$. The sum of z and w is twice the arithmetic mean of the four numbers. The number x is half the largest number. What is the value of y if $w = 4$?

26. _____

27. A parallelogram has three of its vertices at $(-1, 0)$, $(2, 4)$ and $(2, -4)$. What is the positive difference between the greatest possible perimeter and the least possible perimeter of the parallelogram?

27. _____ units

28. The first term of a sequence of positive integers is any two-digit integer. Each subsequent term is the sum of the tens digit and the square of the ones digit of the previous term. One possible sequence is 14, 17, 50, 5, 25, … . If the first term of one such sequence is 97, what is the 2008th term of the sequence?

28. _____

29. In the figure shown, $AC = 13$ and $DC = 2$ units. What is the length of segment BD? Express your answer in simplest radical form.
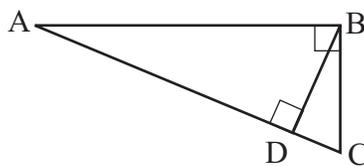
29. _____ units

30. Five runners together complete a 100-mile endurance race by running separate, non-overlapping portions of the course. Runner B's portion is 1.5 times the length of Runner A's portion. The combined portion for Runners C and D is twice the length of the combined portion for Runners A and B. Runner E then runs the last 10 miles of the race. How many miles did Runner B run?

30. _____ miles