

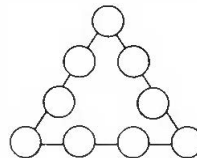
Calendar Math

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Here are the math exercises for the month of June 2000.

1. The following is an addition problem.
S E N D Each letter has a unique value.
M O R E
M O N E Y
2. Using the digits 1, 2, 3, 4, 5, 6 and 7 exactly once each, make an addition problem for which the sum is 100.
3. The length of a rectangle is increased by 10 percent and the width decreased by 20 percent. By what percent, either up or down, is the original area changed?
4. Tom has 19 checkers. How many ways can he arrange them into three piles so that each pile contains an odd number of checkers?
5. In her pocket Susan has fewer than 10 coins totaling 75 cents. What are all possible combinations of coins that she could have? Use only quarters, dimes, nickels and pennies.
6. Have the students list and then graph their favorite TV programs.
7. Bimba's birthday falls on a Monday. His friend Sibongile's birthday is 25 days later. On what day of the week is Sibongile's birthday?
8. Markerville and Centreville are 700 km apart. Tom leaves Markerville at 8 a.m. traveling at 75 km per hour. At the same time Leslie leaves Centreville traveling at 100 km per hour. At what time will they meet? How far from Centreville will they meet?
9. John and Mary are going for lunch. John who has \$22 will pay for the lunch. If he wants to leave a 10 percent tip, what is the most he can pay for lunch?
10. What are the next three terms in the following sequence? 2, 9, 28, 65, —, —, —.
11. Barbara buys 3 candy bars on sale for 99 cents. If she had paid the regular price, it would have cost her 39 cents more. What was the regular price of each candy bar?
12. Draw a triangle with sides of 5 cm, 7 cm and 13 cm. What did you discover?

13. In the barnyard there are 9 animals. They are either cows or chickens. Altogether there are 28 legs. How many cows and how many chickens are there?
14. How many times in a 24-hour period will a digital clock show 3 consecutive numbers, that is, 1:23?
15. The sun rises at 7:30 a.m. Sunday. It rises 3 minutes earlier each day. At what time will it rise the following Sunday?
16. A bag contains 75 candies composed of 30 red candies, 20 green candies and 25 white candies. If Martin draws 15 candies from the bag, how many of each color will there be if the ratio remains the same?
17. Place all the numbers from 1 to 9 in the enclosed circles, so as to obtain the same sum in each direction.



18. Mary is 8 years older than her brother. In 4 years she will be twice as old as her brother. How old is Mary?
19. Susan washes 75 windows in 7.5 hours. With Rose's help it takes 5 hours. How long would it take Rose alone?
20. 73.156 minus $28.499 =$ _____, rounded to the nearest tenth.
21. 1000, 600, 360, 216, ... Rounded to the nearest whole number, what is the seventh term in the sequence?
22. Find a perfect square that when divided by 5 has a remainder of one.
23. $1^{0.25} + 16^{0.5} =$
24. A and B together possess \$570. If A's money were three times what it really is, and B's five times what it really is, the sum would be \$2,350. What is the amount that each possesses?
25. One fifth of the class wanted oranges, 40 percent wanted apples and the rest wanted bananas. What percent of the class wanted bananas?

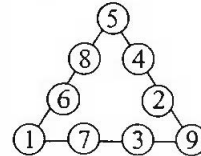
26. On a scaled map, 1 cm = 60 km. Using this scale, what distance will a line 105 mm long represent?
27. Find the product of the cube roots of 8 and 64.
28. Two cyclists start from the same point at the same time and travel in opposite directions. One cyclist travels at 16 km/h. After 1.5 hours they are 60 km apart. What is the speed of the second cyclist?
29. Find the quotient when the largest factor of 12 is divided by an even prime.
30. $\frac{?}{30}$ on a 24 hour clock is equal to 2:30 p.m.?

Teachers are encouraged to have students find different answers and problem-solving approaches to the problems. With minimal changes, many of the problems can be adapted to students at various grade levels.

Answers

1.
$$\begin{array}{r} 9,567 \\ +1,085 \\ \hline 10,652 \end{array}$$
2. $52 + 34 + 1 + 6 + 7$. There may be more solutions.
3. Reduced by 12 percent
4. I found 9 ways. Can you find more?
5. I found 10 solutions. Can you find any more? I made a table.
6. Graphs will vary.
7. Friday
8. a. noon
b. 400 km

9. \$20
10. 126, 217, 344
11. 46 cents
12. The triangle can't be drawn. The combined length of the two shortest sides must be longer than the length of the third side.
13. 5 cows, 4 chickens
14. 14 times
15. 7:09 a.m.
16. 6 red, 4 green, 5 white
- 17.



18. Mary is 12 years old.
19. 11.25 hours
20. 44.7
21. 47
22. 36
23. 5
24. A has \$250 and B has \$320.
25. 40 percent
26. 630 km
27. 8
28. 24 km/hr
29. 6. Using 12 as a factor of itself. Two is the only even prime.
30. 14

Square Numbers

Is it possible to determine, without a calculator, whether the number 3 141 592 653 589 793 is a square number?
