Calendar Math

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Here are 31 math exercises, one for each day of the month.

1. Find 3 consecutive numbers whose sum is 36.
2. A floor measures 3 m by 4 m. How many tiles that measure 10 cm on a side will be required to cover the floor?
3. Susan drives from Calgary to Edmonton at a rate of 100 km/h. She drives back at a rate of 110 km/h. What was her average speed?
4. Find the average of 151 whole numbers from 1–150, inclusive.
5. Cyprian leaves Vancouver on a flight that leaves at 7 a.m. to fly to Toronto. The flight takes 4 hours. What time will it be when he arrives in Toronto?
6. For every two balloons I buy at the regular price, I get a third balloon for a penny. I spent 45 cents for nine balloons. Find the regular price of a balloon.
7. Find the remainder when 230,060,145,717 is divided by 9.
8. If $a = 4$, $b = 5$, $c = 6$ and $d = 7$, find the value of $ab + bc + cd - da$.
9. A cat weights 2/3 of its weight plus 2 kg. Find the weight of the cat.
10. A small stadium has 23 seats in the first row, 21 seats in the second row, 19 seats in the third row and follows a similar pattern until it has 1 seat in the last row. How many seats are there in the stadium?
11. Lucy has 3 more pairs of slacks than she has dresses and 3 more blouses than she has pairs of slacks. Altogether she has 18 pieces of clothing. How many pairs of slacks, blouses and dresses does she have?
12. Jill's birthday is on a Tuesday. Lori's birthday is 10 days later. What day of the week does Lori's birthday fall?
13. Tom wants to create a play area for his dog. He has 100 m of fencing. What is the largest area he can make with this much fence?
14. Hotdogs cost $1.50 each and hamburgers cost $2 each. If Martha spends $19 for 11 articles of either hotdogs or hamburgers, how many of each does she buy?
15. Find a pattern and determine the next number in this series: 77, 49, 36, 18, ___.
16. If a field is 15 m by 50 m, how many metres will you save by running diagonally across the field than by running along the two sides?
17. Is 3/5 of 49 more or less than 25? Why?
18. Two fractions have a sum greater than zero but less than one. What are some other statements you can make about these two fractions?
19. Thurston gave Helen $2 more than she already had. After receiving Thurston's gift Helen had $26. How much did Thurston give Helen?
20. The town library charges a fine for each overdue library book. The fine is $0.25 plus $0.11 per day. Susan was fined $0.80. How many days overdue was Susan's book?
21. The eight-digit number 79A 12504 is divisible by 6. What are the possible values of A?
22. These numbers are gumbos: 147; 63; 448; 6,370. None of these numbers are gumbos: 111; 37; 4,533. Which of these numbers are gumbos: 731; 980; 84; 1,111; 364?
23. I have $1.19 but I can't give change for a dollar, a quarter, a dime or a nickel. There are 11 coins. What coins do I have?
24. On one of the questions in a math test Michael divided by 9, rather than multiplying by 9. He got an answer of 18. What was the correct answer?
25. Jason has five friends at his birthday. To be polite, each person shakes hands with everyone else. How many handshakes will there be? (This is an excellent problem to solve by actual demonstration.)
26. Use the four numerals 3, 5, 6, 8, to form two-digit numbers, so that when they are multiplied you will get the largest product.
27. Cheryl will be 21 years old, three years from today, October 16, 1996. In what year was she born?
28. Name all the whole numbers that can replace the question mark so that the following expression has a value between 9 and 18. $2 + 3 \times ? =$ ___ .
29. If you write all the numbers from 1–100 how many times do you write the digit 5? Estimate first. Who in the class had the closest estimate?
30. Make a bar graph demonstrating the months of the year when each of the students in the class were born.

31. Put the appropriate signs between each of the following numbers so as to get an answer of 9.
8 4 2 5 = 9

Many of these exercises were taken from or modified after problems in various issues of *Mathematics Teaching in the Middle School*, a publication of the NCTM. This is an excellent journal for teachers teaching students mathematics in the middle years.

Teachers can modify the difficulty of many of these exercises with minor revisions.

Answers

1. 11, 12, 13
2. 1,200 tiles
3. 105 km/h
4. 76
5. 2 p.m.
6. 7 cents
7. 0
8. 64
9. 6 kg
10. 144 seats
11. 3 dresses, 6 slacks, 9 blouses
12. Friday
13. A circle with an area of 793.8m²
14. 9 hotdogs, 5 hamburgers
15. 9
16. 12.8 m (Use theorem of Pythagoras.)
17. More, because 49 is close to 50 and 3/5 is more than 1/2. One half of 50 is 25.
18. The average of the fractions has to be greater than zero but less than one-half. Both fractions could be less than one-half. They could have the same or different denominators.
19. $14
20. 5 days
21. 2, 8
22. 980, 84, 364
23. 4 pennies, 4 dimes, 3 quarters
24. 1,458
25. 10
26. $83 \times 65 = 5,395$
27. 1978
28. 3, 4, 5
29. 20
30. Draw the graph
31. $(4 \times 3) + 2 - 5 = 9$

Measurability

One problem with grades is that they don't measure anything.

—Donald C. Mainprize, *ABCs for Educators*