

Calendar Math

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- When you write all the numbers from 1 to 50, how many times do you write the digit 3?
- Choose a number between 1 and 50. Have your classmates determine the number by asking questions that can be answered by "yes" or "no." For example: Is the number less than 25? The winner gets to choose the next number.
- Think of a number. Add 2 to your number. Double the amount you now have. Add 6. Divide by 2. Subtract your original number. What is the result? Does this always work?
- In a bag there are twice as many red blocks as blue blocks, and twice as many yellow blocks as red blocks. Altogether there are 14 blocks. How many of each color are there in the bag?
- Five boys ran a 400-metre dash. A came in first. B came in last. If D was ahead of C, and E was just behind him, who came in second?
- Six girls try to guess the number of pennies in a jar. The six guesses are 52, 59, 62, 65, 49 and 42. One guess is 12 away, and the other guesses are 1, 4, 6, 9 and 11 away. How many pennies are in the jar?
- How many different 4-digit numbers can you form using the digits 1, 9, 3 and 9?
- Use the numbers 3, 4, 5, 6, 7 and 10 exactly once and any of the four basic operations in an equation to make the number 1.
- Within the numbers 1, 2, 3, 4, 5, 6, 7, 8, 9 there is a mystery number. By doing the following exercises, determine the mystery number. Use each number only once.
 - Find 2 numbers whose sum is 3.
 - Find 2 numbers whose sum is 8.
 - Find 2 numbers whose sum is 12.
 - Find 2 numbers whose sum is 15.The number left is the mystery number.
- With one straight line, slice a circle into two pieces. With two cuts how many pieces do you get? What is the largest number of pieces you can get with three cuts?
- The ratio of blue marbles to red marbles in a box is 3 to 5. If 30 red marbles are in the box, how many blue marbles are there?
- Using only the number 4 and the four basic operations (+, -, ×, ÷), write the numbers from 1 to 16. For example: $12 = 4 + 4 + 4$.
- A perfect number is a number that is the sum of its factors. Find the smallest perfect number.
- A certain magical plant doubles in height every day. If it is 1 cm tall today, how tall will it be in 5 days?
- What is 10^8 divided by one million?
- Cyprian's shadow is 10 m long at the same time that the shadow of a tree is 40 m long. If Cyprian is 2 m tall, how tall is the tree?
- If March 1 is on a Tuesday, on what day of the week will April Fools' Day fall?
- In a class of 25 students, 12 wear glasses and 11 wear braces. If 7 wear both glasses and braces, how many students wear neither glasses nor braces?
- Tom saved \$1 the first week and in each subsequent week he saved three times as much as the previous week. How much had he saved after five weeks?
- Which of these is the largest?
 - One more than $\frac{1}{2}$ of 16.
 - One plus $\frac{2}{3}$ of a dozen.
 - Five more than $\frac{1}{5}$ of 20.
 - Five more than twice 2.
 - They are all the same.
- Sibongile bought a pair of shorts, a T-shirt and a pair of socks for \$20. The shorts cost \$9 more than the T-shirt, and both together cost \$16 more than the socks. How much did Sibongile pay for each item?
- Mary wants to make a pen for her cat. She has 22 m of wire. What is the largest area she can enclose?
- What is the smallest number that is equal to four times the sum of its digits? Five times the sum of its digits? Six times the sum of its digits? Seven times the sum of its digits? Eight times the sum of its digits? Nine times the sum of its digits?
- How many whole numbers between 1 and 100 have their digits in decreasing order? For example: 32.
- Write an expression equal to 15 using six 1s and the addition sign. No other symbols may be used.

26. Find the missing numbers in the number sequence.
 1, 2, 4, 7, 11, __, __, 29.
 1, 1, 2, 3, 5, 8, __, 21, __, __.
27. It's greater than 39.
 It's not a multiple of 9.
 It's less than 60.
 It's a multiple of 6.
 The sum of its digits is 12.
 What is the number?
28. Jason is 23 years younger than his father. In 5 years, the sum of their ages will be 41 years. How old is Jason today?
29. A salesman traveled at 60 km/h while making a 120-km trip to a client, then returned home at 40 km/h. What was his average speed for the round trip?
30. The price of 3 shirts is n dollars. At that price, how many shirts can be bought for \$40?
31. Paul can drill the holes he needs in 5 minutes with a power drill, or in 20 minutes with a hand drill. He starts with the power drill, but after 2 minutes it stops working and he finishes with the hand drill. How long does he work with the hand drill?
8. $3 + 4 - 7 + 5 + 6 - 10 = 1$
9. $1 + 2, 3 + 5, 4 + 8, 6 + 9$. Seven is the mystery number.
10. 4 pieces, 7 pieces
11. 18 blue marbles
12. $4/4 = 1, 4/4 + 4/4 = 2, 4 - 4/4 = 3, 4 = 4, 4 + 4/4 = 5, 4 + 4/4 + 4/4 = 6,$
 $4 + 4 - 4/4 = 7, 4 + 4 = 8, 4 + 4 + 4/4 = 9, 4 + 4 + 4/4 + 4/4 = 10,$
 $4 + 4 + 4 - 4/4 = 11, 4 + 4 + 4 = 12, 4 + 4 + 4 + 4/4 = 13,$
 $4 + 4 + 4 + 4/4 + 4/4 = 14, 4 \times 4 - 4/4 = 15, 4 \times 4 = 16.$
 There are many more solutions.
13. $6 = 1 + 2 + 3$
14. 16 cm
15. 100
16. 8 m
17. Friday
18. 9
19. \$121
20. e. They are all the same
21. Shorts cost \$13.50, T-shirts cost \$4.50, socks cost \$2.00.
22. 38.54 m^2
23. 12, 45, 54, 21, 72, 81
24. 45
25. $11 + 1 + 1 + 1 + 1 = 15$
26. a. 16, 22 b. 13, 34, 55
27. 48
28. Jason is 4 years old.
29. 48 km/h
30. $120/n$
31. 12 minutes

Answers

1. 15
 2. No specific answer
 3. 5
 4. 2 blue, 4 red, 8 yellow
 5. D
 6. 53 pennies
 7. 12

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Strange "30"

The sum of two natural numbers is 90. The sum of 25 percent of the first addend and 75 percent of the second addend is exactly 30. What are the two natural numbers?