



Math Brain Teasers



25 riddles from easy to tricky. Write your answer on the line. Answers are on the last page.

Easy riddles ★

- 1 A farmer has some chickens and some cows. Together they have 10 heads and 28 legs. How many cows are there?
ANSWER _____
- 2 A brick weighs 1 kilogram plus half a brick. How much does a whole brick weigh?
ANSWER _____
- 3 You have a ribbon 12 meters long. How many cuts do you need to make to get 12 pieces, each 1 meter long?
ANSWER _____
- 4 Three numbers in a row (like 4, 5, 6) add up to 72. What are they?
ANSWER _____
- 5 A pen costs twice as much as a pencil. Together they cost 90 cents. How much does the pencil cost?
ANSWER _____
- 6 A patch of moss doubles in size every day. On day 20 it covers a whole rock. On which day did it cover exactly half the rock?
ANSWER _____
- 7 Using exactly eight 8s and only addition, can you make 1000?
ANSWER _____
- 8 Sara is 6 and her mom is 30. In how many years will her mom be exactly 3 times as old as Sara?
ANSWER _____

Medium riddles ★★

- 9 If 3 cats catch 3 mice in 3 minutes, how many cats are needed to catch 100 mice in 100 minutes?
ANSWER _____
- 10 What's the largest number of pieces you can cut a round pizza into with 3 straight cuts? (You can't move the pieces between cuts.)
ANSWER _____
- 11 A shirt is 50% off. At the checkout you get another 50% off the sale price. Is the shirt free?
ANSWER _____
- 12 What's the smallest whole number bigger than 1 that leaves a remainder of 1 when you divide it by 2, 3, 4, 5 or 6?
ANSWER _____
- 13 How many two-digit numbers have digits that add up to 9?
ANSWER _____

- 14 You place the numbers 1 to 9 in a 3×3 grid so that every row, every column and both diagonals add up to the same total. What is that total?
ANSWER _____
- 15 On day 1 you get 1 cent. Every day after that, you get double what you got the day before. On which day do you first get more than \$10 in a single day?
ANSWER _____
- 16 You drive 60 km to Grandma's at 30 km/h and drive the same 60 km home at 60 km/h. What is your average speed for the whole trip?
ANSWER _____
- 17 A $3 \times 3 \times 3$ cube is painted red on the outside and then cut into 27 small cubes. How many small cubes have red paint on exactly two faces?
ANSWER _____

Tricky riddles ★ ★ ★

- 18 Two trains start 120 km apart and head toward each other, one at 40 km/h and the other at 20 km/h. A bird starts at the front of one train and flies at 75 km/h back and forth between them until they meet. How far does the bird fly?
ANSWER _____
- 19 The hands of a clock show exactly 3:15. What is the angle between the hour hand and the minute hand?
ANSWER _____
- 20 Three friends pay \$30 for a hotel room, \$10 each. The clerk realizes the room costs only \$25 and sends the bellhop back with \$5. The bellhop keeps \$2 and gives each friend \$1. Now each friend has paid \$9, and $3 \times \$9 = \$27$. Add the bellhop's \$2 and you get \$29. Where did the missing dollar go?
ANSWER _____
- 21 You have a 3-liter jug and a 5-liter jug, both with no markings, and a tap. How can you measure exactly 4 liters?
ANSWER _____
- 22 A census taker asks a woman the ages of her three daughters. She says, "The product of their ages is 36." He says that isn't enough. She says, "The sum of their ages is our house number." He looks at the house number and still can't tell. She adds, "My oldest daughter, who is older than both her sisters, loves chess." How old are the daughters?
ANSWER _____
- 23 You climb a staircase of 5 steps, taking either 1 or 2 steps at a time. How many different ways can you climb it?
ANSWER _____
- 24 In a family, the product of two sisters' ages is 48 and one is 2 years older than the other. How old is each sister?
ANSWER _____
- 25 Your first four test scores average 80. What score do you need on the fifth test to raise your average to exactly 82?
ANSWER _____

Answers

Math Brain Teasers · answer key · print or fold this page away before you hand out the sheet

1. **4 cows.** If all 10 animals were chickens, there'd be 20 legs. The extra 8 legs come from cows, and each cow adds 2 extra legs, so there are $8 \div 2 = 4$ cows (and 6 chickens). Check it: $4 \times 4 + 6 \times 2 = 28$.
2. **2 kilograms.** The brick is "1 kg + half a brick," so the 1 kg must be the other half. Two halves of 1 kg make 2 kg.
3. **11 cuts.** Each cut adds one piece. You start with 1 piece, so you need 11 cuts to reach 12.
4. **23, 24 and 25. $72 \div 3 = 24$ is the middle number, and $23 + 24 + 25 = 72$.**
5. **30 cents.** Pencil plus pen is 3 shares, and $90 \div 3 = 30$. The pen costs 60 cents.
6. **Day 19.** Because it doubles every day, it was half the size one day before it covered the whole rock.
7. **$888 + 88 + 8 + 8 + 8 = 1000$.** That's $3 + 2 + 1 + 1 + 1 = 8$ eights, and $888 + 88 = 976$, plus 24 is 1000.
8. **6 years.** Sara will be 12 and her mom 36, and $36 = 3 \times 12$. (Mom is always 24 years older, and 24 is twice Sara's age only when Sara is 12.)
9. **3 cats.** Each cat catches 1 mouse every 3 minutes. In 100 minutes, 3 cats each catch $33\frac{1}{3}$ mice, and $3 \times 33\frac{1}{3} = 100$.
10. **7 pieces.** The first cut makes 2 pieces, the second (crossing the first) makes 4, and the third, crossing both earlier cuts at different points, passes through 3 pieces and splits each one, making 7.
11. **No, you pay 25% of the original price.** A \$20 shirt drops to \$10, and half of \$10 is \$5, which is a quarter of \$20.
12. **61.** The smallest number divisible by 2, 3, 4, 5 and 6 is 60, so 61 leaves a remainder of 1 every time.
13. **9.** They are 18, 27, 36, 45, 54, 63, 72, 81 and 90.
14. **$15. 1 + 2 + \dots + 9 = 45$, and the three rows share it equally, so each row is $45 \div 3 = 15$.**
15. **Day 11.** The amounts go 1, 2, 4, 8, 16, 32, 64, 128, 256, 512 cents on days 1 to 10, and 1,024 cents (\$10.24) on day 11.
16. **40 km/h.** The trip there takes 2 hours and the trip home takes 1 hour, so you cover 120 km in 3 hours, and $120 \div 3 = 40$.
17. **12.** A cube has 12 edges, and each edge has exactly 1 small cube that isn't a corner. (8 corner cubes have 3 painted faces, 6 face-center cubes have 1, and the 1 in the very middle has none.)
18. **150 kilometers.** The trains close the gap at $40 + 20 = 60$ km/h, so they meet after $120 \div 60 = 2$ hours. The bird flies the whole time, and $75 \times 2 = 150$.
19. **7.5 degrees.** The minute hand points at the 3, which is 90° from the top. The hour hand has moved a quarter of the way from the 3 to the 4, and that gap is 30° , so it's 7.5° past the minute hand.
20. **There is no missing dollar.** The friends paid \$27 in total: \$25 for the room plus \$2 for the bellhop. Adding the \$2 again counts it twice. The right sum is \$27 paid + \$3 returned = \$30.
21. **Fill the big jug twice.** Fill the 5-liter jug and pour it into the 3-liter jug, leaving 2 liters in the big one. Empty the 3-liter jug and pour the 2 liters into it. Fill the 5-liter jug again, then top up the 3-liter jug, which takes just 1 liter. Exactly 4 liters are left in the 5-liter jug.
22. **2, 2 and 9.** The sets that multiply to 36 add up to 38, 21, 16, 14, 13, 13, 11 and 10. Only 13 appears twice (1, 6, 6 and 2, 2, 9), which is why the house number didn't help. Only 2, 2, 9 has one daughter older than both others.
23. **8 ways. 1 step has 1 way, 2 steps have 2, and after that each number of steps is the sum of the two before it (your last move was a 1 or a 2): 3, 5, then 8.**
24. **6 and 8. $6 \times 8 = 48$, and $8 - 6 = 2$.** Other factor pairs of 48 (1×48 , 2×24 , 3×16 , 4×12) are too far apart.
25. **90.** Four tests at an average of 80 make 320 points. An average of 82 over five tests needs $5 \times 82 = 410$ points, and $410 - 320 = 90$.

Need a hint? Every riddle has one at riddlepedia.com/math-brain-teasers/, where you can also play them as a game.