KIDSLEARN MATH · PRACTICE ASSIGNMENT

Challenger Mental Math

Name: Date: Score: / 50

Work every chain in your head, one step at a time from left to right, just as you hear it on the page: do each step to the answer so far. Write only the final answer. Answers are at the end.

Part A — Warm-up

1. Start with 16. Subtract 3, add on 13, then add on 15.

2. Start with 8. Add on 16, subtract 19, then add on 20.

3. Start with 15. Take away 7, add 18, then add 3.

4. Start with 16, subtract 1, take away 9, then add 18.

5. Start with 20. Divide by 5, multiply by 4, then subtract 7.

6. Start with 13, subtract 1, multiply by 11, then divide by 12.

7. Start with 16. Take away 10, divide by 3, then add 16.

8. Start with 11, take away 5, multiply by 11, then divide by 6.

9. Start with 12, halve it, take away 4, add 13, then double it. What do you get?

10. Start with 5, add 5, double it, take away 8, then halve it. What do you get?

11. Start with 18, halve it, take away 5, double it, then double it. What do you get?

12. Nina picks 11 apples. She eats 1 of them, then puts the rest into bags of 5. How many bags does she fill?

13. Some children stand in 7 rows of 9. Then 57 children go back inside. How many are still standing in the rows?

14. Some children stand in 8 rows of 6. Then 43 children go back inside. How many are still standing in the rows?

15. A frog sits on step 3 of a long staircase. It hops up 9 steps, back down 7 steps, then up 5 more. Which step is it on now?

Part B — Core practice

16. Start with 37. Add 43, divide by 20, take away 1, then add 4.

17. Start with 30. Take away 5, divide by 5, multiply by 8, then multiply by 3.

18. Start with 18, add 32, multiply by 3, take away 15, then add on 29.

19. Start with 19, add on 45, add on 18, divide by 41, then multiply by 10.

20. Start with 12, add 11, multiply by 11, divide by 23, then add on 22.

21. Start with 9, multiply by 3, add 39, take away 12, then multiply by 7.

22. You hear: “Forty-eight minus sixteen, times six, minus twenty-nine, plus twenty-six.” Work it out step by step. What is the answer?

23. You hear: “Ten times twelve, divided by forty, plus forty-five, times two.” Work it out step by step. What is the answer?

24. You hear: “Twenty-four divided by eight, minus one, plus twelve, times nine.” Work it out step by step. What is the answer?

25. You hear: “Forty-eight minus eight, times eight, divided by twenty.” Work it out step by step. What is the answer?

26. Follow the arrows. What number comes out at the end?

$$13 \xrightarrow{+42} \square \xrightarrow{-21} \square \xrightarrow{\div 17} ?$$

27. Follow the arrows. What number comes out at the end?

$$24 \xrightarrow{+49} \square \xrightarrow{\times 5} \square \xrightarrow{-11} ?$$

28. Follow the arrows. What number comes out at the end?

$$25 \xrightarrow{\div 5} \square \xrightarrow{+1} \square \xrightarrow{\times 8} ?$$

29. Follow the arrows. What number comes out at the end?

$$47 \xrightarrow{+24} \square \xrightarrow{\times 6} \square \xrightarrow{-25} ?$$

30. Start with 13, multiply by $\square$, subtract 4, then add 22. The answer is 96. What number goes in the box?

31. Start with 20, subtract 2, divide by $\square$, then add 11. The answer is 13. What number goes in the box?

32. Start with 7, multiply by 5, divide by $\square$, then add 21. The answer is 26. What number goes in the box?

33. Start with 30, subtract 19, add $\square$, then multiply by 3. The answer is 120. What number goes in the box?

34. A hall has 18 rows of 25 seats. 26 seats are broken, and the rest are shared equally between 4 schools. How many seats does each school get?

35. A baker makes 5 trays of 8 muffins. She sells 12 muffins and packs the rest into boxes of 7. How many boxes does she fill?

36. A hall has 18 rows of 25 seats. 27 seats are broken, and the rest are shared equally between 3 schools. How many seats does each school get?

37. A class of 20 students splits into teams of 5. Each team gets 5 balls. Then 18 balls go missing. How many balls are left?

38. Lily saves $13 every week for 7 weeks. She spends $60 on a game, then gets $12 for her birthday. How much money does she have now?

Part C — Challenge

39. Start with 85. Multiply by 8, add 17, divide by 41, subtract 14, then add 88.

40. Start with 96, add on 75, subtract 98, multiply by 5, divide by 73, then multiply by 10.

41. Start with 71. Add on 15, divide by 43, multiply by 10, multiply by 12, then take away 34.

42. Start with 8, multiply by 11, multiply by 5, subtract 32, divide by 68, then add 72.

43. Start with 54, divide by 18, add 85, multiply by 6, subtract 84, then add 41.

44. A stretch — keep the running total in your head: 9 times 9, divided by 27, plus 12, plus 22, times 5, minus 18, plus 22. What is the answer?

45. A stretch — keep the running total in your head: 5 plus 22, times 9, plus 13, plus 30, divided by 26, minus 9, times 4. What is the answer?

46. A stretch — keep the running total in your head: 14 times 9, divided by 21, times 2, divided by 4, plus 22, times 5, minus 18. What is the answer?

47. I think of a number. I divide it by 10, multiply by 7, then subtract 3. My answer is 11. What number did I start with?

48. I think of a number. I subtract 12 from it, take away 2, add 7, then multiply by 12. My answer is 132. What number did I start with?

49. I think of a number. I divide it by 7, take away 1, then multiply by 5. My answer is 10. What number did I start with?

50. I think of a number. I multiply it by 5, subtract 10, then divide by 5. My answer is 4. What number did I start with?

Answer Key — Challenger Mental Math

1. 41
$16 - 3 = 13, 13 + 13 = 26, 26 + 15 = 41.$

2. 25
$8 + 16 = 24, 24 - 19 = 5, 5 + 20 = 25.$

3. 29
$15 - 7 = 8, 8 + 18 = 26, 26 + 3 = 29.$

4. 24
$16 - 1 = 15, 15 - 9 = 6, 6 + 18 = 24.$

5. 9
$20 \div 5 = 4, 4 \times 4 = 16, 16 - 7 = 9.$

6. 11
$13 - 1 = 12, 12 \times 11 = 132, 132 \div 12 = 11.$

7. 18
$16 - 10 = 6, 6 \div 3 = 2, 2 + 16 = 18.$

8. 11
$11 - 5 = 6, 6 \times 11 = 66, 66 \div 6 = 11.$

9. 30
$12 \div 2 = 6, 6 - 4 = 2, 2 + 13 = 15, 15 \times 2 = 30.$

10. 6
$5 + 5 = 10, 10 \times 2 = 20, 20 - 8 = 12, 12 \div 2 = 6.$

11. 16
$18 \div 2 = 9, 9 - 5 = 4, 4 \times 2 = 8, 8 \times 2 = 16.$

12. 2
$11 - 1 = 10$, then $10 \div 5 = 2$.

13. 6
$7 \times 9 = 63$, then $63 - 57 = 6$.

14. 5
$8 \times 6 = 48$, then $48 - 43 = 5$.

15. 10
$3 + 9 = 12, 12 - 7 = 5, 5 + 5 = 10.$

16. 7
$37 + 43 = 80, 80 \div 20 = 4, 4 - 1 = 3, 3 + 4 = 7.$

17. 120
$30 - 5 = 25, 25 \div 5 = 5, 5 \times 8 = 40, 40 \times 3 = 120.$

18. 164
$18 + 32 = 50, 50 \times 3 = 150, 150 - 15 = 135,$
$135 + 29 = 164.$

19. 20
$19 + 45 = 64, 64 + 18 = 82, 82 \div 41 = 2,$
$2 \times 10 = 20.$

20. 33
$12 + 11 = 23, 23 \times 11 = 253, 253 \div 23 = 11,$
$11 + 22 = 33.$

21. 378
$9 \times 3 = 27, 27 + 39 = 66, 66 - 12 = 54,$
$54 \times 7 = 378.$

22. 189
$48 - 16 = 32, 32 \times 6 = 192, 192 - 29 = 163,$
$163 + 26 = 189.$

23. 96
$10 \times 12 = 120, 120 \div 40 = 3, 3 + 45 = 48,$
$48 \times 2 = 96.$

24. 126
$24 \div 8 = 3, 3 - 1 = 2, 2 + 12 = 14, 14 \times 9 = 126.$

25. 16
$48 - 8 = 40, 40 \times 8 = 320, 320 \div 20 = 16.$

26. 2
$13 + 42 = 55, 55 - 21 = 34, 34 \div 17 = 2.$

27. 354
$24 + 49 = 73, 73 \times 5 = 365, 365 - 11 = 354.$

28. 48
$25 \div 5 = 5, 5 + 1 = 6, 6 \times 8 = 48.$

29. 401
$47 + 24 = 71, 71 \times 6 = 426, 426 - 25 = 401.$

30. 6
Backwards from 96: $96 - 22 = 74, 74 + 4 = 78$. The box turns 13 into 78, so it is $78 \div 13 = 6$.

31. 9
Forwards: $20 - 2 = 18$. Backwards from 13: $13 - 11 = 2$. The box turns 18 into 2, so it is $18 \div 2 = 9$.

32. 7
Forwards: $7 \times 5 = 35$. Backwards from 26: $26 - 21 = 5$. The box turns 35 into 5, so it is $35 \div 5 = 7$.

33. 29
Forwards: $30 - 19 = 11$. Backwards from 120: $120 \div 3 = 40$. The box turns 11 into 40, so it is $40 - 11 = 29$.

34. 106
$18 \times 25 = 450, 450 - 26 = 424, 424 \div 4 = 106.$

35. 4
$5 \times 8 = 40, 40 - 12 = 28, 28 \div 7 = 4.$

36. 141
$18 \times 25 = 450, 450 - 27 = 423, 423 \div 3 = 141.$

37. 2
$20 \div 5 = 4$ teams, $4 \times 5 = 20$ balls, $20 - 18 = 2$.

38. $43
$13 \times 7 = 91, 91 - 60 = 31, 31 + 12 = 43$ dollars.

39. 91
$85 \times 8 = 680, 680 + 17 = 697, 697 \div 41 = 17,$
$17 - 14 = 3, 3 + 88 = 91.$

40. 50
$96 + 75 = 171, 171 - 98 = 73, 73 \times 5 = 365,$
$365 \div 73 = 5, 5 \times 10 = 50.$

41. 206
$71 + 15 = 86, 86 \div 43 = 2, 2 \times 10 = 20,$
$20 \times 12 = 240, 240 - 34 = 206.$

42. 78
$8 \times 11 = 88, 88 \times 5 = 440, 440 - 32 = 408,$
$408 \div 68 = 6, 6 + 72 = 78.$

43. 485
$54 \div 18 = 3, 3 + 85 = 88, 88 \times 6 = 528,$
$528 - 84 = 444, 444 + 41 = 485.$

44. 189
$9 \times 9 = 81, 81 \div 27 = 3, 3 + 12 = 15,$
$15 + 22 = 37, 37 \times 5 = 185, 185 - 18 = 167,$
$167 + 22 = 189.$

45. 8
$5 + 22 = 27, 27 \times 9 = 243, 243 + 13 = 256,$
$256 + 30 = 286, 286 \div 26 = 11, 11 - 9 = 2,$
$2 \times 4 = 8.$

46. 107
$14 \times 9 = 126, 126 \div 21 = 6, 6 \times 2 = 12,$
$12 \div 4 = 3, 3 + 22 = 25, 25 \times 5 = 125,$
$125 - 18 = 107.$

47. 20
Undo each step, last one first: $11 + 3 = 14, 14 \div 7 = 2,$
$2 \times 10 = 20.$

48. 18
Undo each step, last one first: $132 \div 12 = 11,$
$11 - 7 = 4, 4 + 2 = 6, 6 + 12 = 18.$

49. 21
Undo each step, last one first: $10 \div 5 = 2, 2 + 1 = 3,$
$3 \times 7 = 21.$

50. 6
Undo each step, last one first: $4 \times 5 = 20,$
$20 + 10 = 30, 30 \div 5 = 6.$