Working memory: hold, update, and manipulate: open practice pack

100 untimed questions across 10 authored sections.

Detail	Value
Pack	cognitive-skills-working-memory
Source	cognitive-skills
Pack version	v1
Worksheet items	100
Authored hints	0
Worked explanations	100

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Learner worksheet

Working memory is the skill of holding, updating, and manipulating short sequences, rules, or instructions entirely in your head. Work through each section at your own pace, and try to answer from memory without scrolling back. That is what makes this genuine working-memory practice rather than a lookup.

Choose one answer for each item. For a delayed-recall item, read its study text, cover it, and then answer without looking back.

Holding short sequences

Read each short sequence once, hold it in mind, and answer without re-reading.

1. working-memory-s01-q01

Sequence: 8 - 3 - 6 - 1 - 9. What is the sum of the first and last digits?

- A. 15
- B. 16
- C. 17
- D. 18

Your answer: _____

2. working-memory-s01-q02

Sequence: R - K - P - M - T. Which letter is exactly in the middle position?

- A. K
- B. P
- C. M
- D. T

Your answer: _____

3. working-memory-s01-q03

Hold these three words in mind: BASKET, UMBRELLA, CANDLE. Which one has the most letters?

- A. Basket
- B. Umbrella
- C. Candle
- D. They are all the same length

Your answer: _____

4. working-memory-s01-q04

Sequence: 4 - 7 - 2 - 9 - 5 - 1. Reading backward from the last digit, what is the third digit you reach?

- A. 5
- B. 9
- C. 2
- D. 7

Your answer: _____

5. working-memory-s01-q05

Hold in mind: apple = 3, banana = 5, cherry = 2. What is apple + cherry?

- A. 5
- B. 7
- C. 8
- D. 10

Your answer: _____

6. working-memory-s01-q06

Shape sequence: circle, triangle, circle, square, triangle. How many circles appeared?

- A. 1
- B. 2
- C. 3
- D. 4

Your answer: _____

7. working-memory-s01-q07

Sequence: 5 - 2 - 8. What is the sum of all three digits?

- A. 13
- B. 14
- C. 16
- D. 15

Your answer: _____

8. working-memory-s01-q08

Hold these words in mind: LAMP, RIVER, STONE. Which word came second?

- A. Lamp
- B. Stone
- C. River
- D. Stove

Your answer: _____

9. working-memory-s01-q09

Sequence: T - F - B - X. Which letter came immediately after F?

- A. B
- B. X
- C. T
- D. F

Your answer: _____

10. working-memory-s01-q10

Colour sequence: red, green, blue, green. How many times did green appear?

- A. 1
- B. 3
- C. 4
- D. 2

Your answer: _____

Ordered recall after study

Each item shows material to study first: continue to hide it, then answer entirely from memory.

11. working-memory-s02-q01

> Study text. Read this, then cover it before answering. Study this sequence, then continue: 7, 1, 8, 4.

What was the third number in the sequence?

- A. 1
- B. 4
- C. 8
- D. 7

Your answer: _____

12. working-memory-s02-q02

> Study text. Read this, then cover it before answering. Study this word list in order, then continue: FERN, TIGER, CLOUD, BRICK.

Which word was last in the list?

- A. Cloud
- B. Brick
- C. Tiger
- D. Fern

Your answer: _____

13. working-memory-s02-q03

> Study text. Read this, then cover it before answering. Study these letters in order, then continue: G, M, S, K, V.

Which letter was in the middle (third) position?

- A. M
- B. K
- C. G
- D. S

Your answer: _____

14. working-memory-s02-q04

> Study text. Read this, then cover it before answering. Study this list, then continue: spoon, ladder, candle, marble, ribbon.

Which of these was NOT in the list?

- A. Ladder
- B. Marble
- C. Ribbon
- D. Carpet

Your answer: _____

15. working-memory-s02-q05

> Study text. Read this, then cover it before answering. Study this sequence, then continue: 3, 9, 9, 2, 6.

Which number appeared twice?

- A. 9
- B. 3
- C. 2
- D. 6

Your answer: _____

16. working-memory-s02-q06

> Study text. Read this, then cover it before answering. Study these names in order, then continue: Priya, Callum, Nadia, Tomas.

Who was listed immediately before Nadia?

- A. Priya
- B. Tomas
- C. Callum

- D. Nadia

Your answer: _____

17. working-memory-s02-q07

> Study text. Read this, then cover it before answering. Study this short instruction, then continue: "Turn left at the library, then take the second door on the right."

Which door should you take after turning at the library?

- A. The first door on the left
- B. The second door on the right
- C. The second door on the left
- D. The first door on the right

Your answer: _____

18. working-memory-s02-q08

> Study text. Read this, then cover it before answering. Study this sequence, then continue: Q, 4, R, 7, Z.

How many letters (as opposed to digits) were in the sequence?

- A. 3
- B. 2
- C. 4
- D. 5

Your answer: _____

19. working-memory-s02-q09

> Study text. Read this, then cover it before answering. Study this list in order, then continue: violet, amber, teal, coral, olive, slate.

Which colour was fifth in the list?

- A. Coral
- B. Olive
- C. Slate
- D. Teal

Your answer: _____

20. working-memory-s02-q10

> Study text. Read this, then cover it before answering. Study this sequence, then continue: 6, 2, 7, 5, 1, 9, 3.

What was the second-to-last number?

- A. 1
- B. 3
- C. 9
- D. 5

Your answer: _____

Reversing and reordering

Hold each sequence, then mentally reverse, swap, or re-sort it before answering.

21. working-memory-s03-q01

Sequence: 4 - 1 - 7. Say it backwards in your head. What is the middle digit of the reversed sequence?

- A. 4
- B. 7
- C. 1
- D. It cannot be known

Your answer: _____

22. working-memory-s03-q02

Sequence: N - E - P - A. Reversed, which letter comes first?

- A. A
- B. N
- C. P
- D. E

Your answer: _____

23. working-memory-s03-q03

Sequence: 2 - 8 - 5 - 3. Read backwards, what are the first two digits?

- A. 2 then 8
- B. 3 then 5
- C. 5 then 3
- D. 8 then 2

Your answer: _____

24. working-memory-s03-q04

Sequence: 9 - 4 - 6 - 2 - 7. If you reverse the sequence, which digit is now in the fourth position?

- A. 6
- B. 2
- C. 9
- D. 4

Your answer: _____

25. working-memory-s03-q05

> Study text. Read this, then cover it before answering. Study this sequence, then continue: 5, 8, 1, 6.

From memory, what is the sequence in reverse order?

- A. 6, 1, 8, 5
- B. 5, 8, 1, 6
- C. 6, 8, 1, 5

- D. 1, 6, 5, 8

Your answer: _____

26. working-memory-s03-q06

Sequence: L - D - Q - J - X. Swap the first and last letters in your head. Which letter is now first?

- A. L
- B. X
- C. J
- D. Q

Your answer: _____

27. working-memory-s03-q07

Sequence: 3 - 7 - 2 - 9. Sort the digits from smallest to largest in your head. Which digit is now third?

- A. 3
- B. 2
- C. 7
- D. 9

Your answer: _____

28. working-memory-s03-q08

Sequence: 6 - 1 - 8 - 4 - 5. Move the first digit to the end of the sequence. What is the new middle digit?

- A. 8
- B. 5
- C. 6
- D. 4

Your answer: _____

29. working-memory-s03-q09

Words: PEAR, MINT, OAK. Reverse the word order, then spell the middle word backwards. What do you get?

- A. TNIM
- B. KAO
- C. RAEP
- D. MINT

Your answer: _____

30. working-memory-s03-q10

Sequence: 7 - 3 - 8 - 2 - 6 - 4. Reverse the sequence, then find the sum of the first two digits of the reversed sequence.

- A. 9
- B. 11

- C. 10
- D. 13

Your answer: _____

Running totals and updating

Update a value or tally step by step as you read. Carry only the latest state forward.

31. working-memory-s04-q01

Start with 5. Add 3, subtract 2, add 4. What number do you finish with?

- A. 9
- B. 10
- C. 11
- D. 8

Your answer: _____

32. working-memory-s04-q02

Count the vowels as this list goes past: apple, kiwi, plum. How many vowels appear across all three words?

- A. 4
- B. 6
- C. 5
- D. 3

Your answer: _____

33. working-memory-s04-q03

A lift starts on floor 3. It goes up 4 floors, down 2, up 1. Which floor is it on now?

- A. 6
- B. 5
- C. 7
- D. 8

Your answer: _____

34. working-memory-s04-q04

Start with the word CART. Replace the first letter with P. Which word do you now have?

- A. PORT
- B. CARP
- C. PART
- D. TARP

Your answer: _____

35. working-memory-s04-q05

Keep a running count: how many even numbers pass by in this list: 7, 4, 9, 2, 6, 3, 8?

- A. 3
- B. 5
- C. 2
- D. 4

Your answer: _____

36. working-memory-s04-q06

Start with 20. Halve it, add 6, then subtract 9. What is the result?

- A. 8
- B. 7
- C. 6
- D. 9

Your answer: _____

37. working-memory-s04-q07

Track two counters. Starting at zero, add 1 to counter A each time you read the word LEFT and 1 to counter B each time you read RIGHT: LEFT, RIGHT, LEFT, LEFT, RIGHT, LEFT. What are the final values of A and B?

- A. A = 4, B = 2
- B. A = 3, B = 3
- C. A = 2, B = 4
- D. A = 5, B = 1

Your answer: _____

38. working-memory-s04-q08

Start at 50. Subtract 7 repeatedly, three times in total. Where do you land?

- A. 31
- B. 27
- C. 36
- D. 29

Your answer: _____

39. working-memory-s04-q09

Update the letter each step. Start with B. Move forward two places in the alphabet, then back one, then forward three. Which letter do you reach?

- A. E
- B. G
- C. F
- D. D

Your answer: _____

40. working-memory-s04-q10

You are tracking stock of one item. Start with 12 units. Sell 5, receive 8, sell 6, receive 2. How many units remain?

- A. 10
- B. 12
- C. 9
- D. 11

Your answer: _____

Following multi-step instructions

Hold a short set of instructions in mind and carry them out in order, entirely mentally.

41. working-memory-s05-q01

Take the number 6. Double it, then add the number of letters in the word DOG. What is the result?

- A. 14
- B. 15
- C. 16
- D. 18

Your answer: _____

42. working-memory-s05-q02

Follow all three steps in your head: think of the word TRAIN; remove the first letter; add the letter S to the end. What word results?

- A. TRAINS
- B. RAINS
- C. SRAIN
- D. RAIN

Your answer: _____

43. working-memory-s05-q03

Apply these rules to the number 9: if it is odd, add 5; then, if the result is even, halve it. What do you get?

- A. 7
- B. 9
- C. 14
- D. 4

Your answer: _____

44. working-memory-s05-q04

Follow the instructions in order: start facing north; turn right; turn right again; turn left. Which direction are you facing?

- A. North
- B. South

- C. West
- D. East

Your answer: _____

45. working-memory-s05-q05

Hold this rule: whenever a word contains the letter E, count it. How many of these words get counted: TABLE, CHAIR, DESK, LAMP, SHELF?

- A. 2
- B. 4
- C. 3
- D. 5

Your answer: _____

46. working-memory-s05-q06

Do all steps mentally: write the digits of 47 in reverse; then add 2 to the result. What number do you get?

- A. 74
- B. 49
- C. 72
- D. 76

Your answer: _____

47. working-memory-s05-q07

Follow the rule chain for the letter M: move one letter forward in the alphabet; if the result comes after P, move two letters back; otherwise move one more forward. Which letter do you reach?

- A. O
- B. N
- C. L
- D. P

Your answer: _____

48. working-memory-s05-q08

Carry out these steps: take the word STONE; swap the first two letters; read the result. Which of these do you get?

- A. SOTNE
- B. TSONE
- C. STONE
- D. ETONS

Your answer: _____

49. working-memory-s05-q09

Hold all three conditions, then judge: a number qualifies if it is greater than 10, even, and not a multiple of 6. Which of these qualifies: 14, 12, 9, 18?

- A. 12
- B. 18
- C. 9
- D. 14

Your answer: _____

50. working-memory-s05-q10

Follow every step: start with 3; multiply by 4; subtract 5; multiply the result by itself. What is the final number?

- A. 49
- B. 36
- C. 64
- D. 44

Your answer: _____

Holding under interference

Study something, do a small unrelated mental task, then recall. The distraction is deliberate.

51. working-memory-s06-q01

> Study text. Read this, then cover it before answering. Remember this word, then continue: HARBOUR.

First, solve 6 + 7 in your head. Now, which word were you asked to remember?

- A. Harbour
- B. Harvest
- C. Arbour
- D. Harbinger

Your answer: _____

52. working-memory-s06-q02

> Study text. Read this, then cover it before answering. Remember this number, then continue: 58.

Count backwards from 10 to 1 in your head. What number were you asked to remember?

- A. 85
- B. 58
- C. 48
- D. 68

Your answer: _____

53. working-memory-s06-q03

> Study text. Read this, then cover it before answering. Remember these two words, then continue: CANDLE, ORANGE.

Mentally spell your own first name, then answer: which pair matches what you studied?

- A. Candle and Orchid
- B. Kindle and Orange

- C. Candle and Orange
- D. Candle and Amber

Your answer: _____

54. working-memory-s06-q04

> Study text. Read this, then cover it before answering. Remember this sequence, then continue: 4, 9, 1.

First decide mentally whether 17 is odd or even; then recall, what was the middle number of the studied sequence?

- A. 4
- B. 1
- C. 17
- D. 9

Your answer: _____

55. working-memory-s06-q05

Hold the letters K and T in mind. Count the words in the phrase 'the quick silver fox' (there are four). Now: which of the held letters comes later in the alphabet?

- A. K
- B. Q
- C. T
- D. They are equal

Your answer: _____

56. working-memory-s06-q06

> Study text. Read this, then cover it before answering. Remember this shopping item and quantity, then continue: 3 lemons.

Mentally add 14 + 9; then recall what you studied. Which was it?

- A. 3 lemons
- B. 4 lemons
- C. 3 melons
- D. 2 lemons

Your answer: _____

57. working-memory-s06-q07

> Study text. Read this, then cover it before answering. Remember these three digits in order, then continue: 7, 2, 5.

First judge which is larger: 48 or 51. Now, from memory, what was the studied sequence?

- A. 7, 5, 2
- B. 7, 2, 5
- C. 2, 7, 5
- D. 7, 2, 6

Your answer: _____

58. working-memory-s06-q08

> Study text. Read this, then cover it before answering. Remember this phrase, then continue: GREEN DOOR.

Mentally count the sides of a hexagon; then recall the phrase you studied.

- A. Green Floor
- B. Grey Door
- C. Green Down
- D. Green Door

Your answer: _____

59. working-memory-s06-q09

> Study text. Read this, then cover it before answering. Remember these two numbers, then continue: 34 and 81.

First work out 5 x 6 in your head; then answer, what is the sum of the two numbers you studied?

- A. 105
- B. 115
- C. 125
- D. 47

Your answer: _____

60. working-memory-s06-q10

> Study text. Read this, then cover it before answering. Remember this seat allocation, then continue: Row F, Seat 12.

Mentally name the month that follows October; now recall, which seat allocation did you study?

- A. Row F, Seat 12
- B. Row E, Seat 12
- C. Row F, Seat 21
- D. Row G, Seat 11

Your answer: _____

Dual tasks: hold and compute

Keep several values in mind and calculate with them at the same time.

61. working-memory-s07-q01

Hold these prices in mind: tea = £2, scone = £3, juice = £4. What is the total cost of one tea and two scones?

- A. £7
- B. £9
- C. £8
- D. £10

Your answer: _____

62. working-memory-s07-q02

Remember the code pairs: X = 5, Y = 8, Z = 2. What is (X x Z) + Y?

- A. 18
- B. 15
- C. 20
- D. 16

Your answer: _____

63. working-memory-s07-q03

Hold this in mind: the red box weighs 4 kg, the blue box weighs 7 kg, the green box weighs 5 kg. Which two boxes together weigh exactly 9 kg?

- A. Red and blue
- B. Red and green
- C. Blue and green
- D. No pair weighs 9 kg

Your answer: _____

64. working-memory-s07-q04

> Study text. Read this, then cover it before answering. Study these values, then continue: north = 6, south = 1, east = 9.

From memory, what is north + east - south?

- A. 16
- B. 15
- C. 13
- D. 14

Your answer: _____

65. working-memory-s07-q05

Hold the sequence 5 - 3 - 8 in mind while you double each digit. What is the doubled sequence?

- A. 10, 6, 16
- B. 10, 8, 16
- C. 8, 6, 16
- D. 10, 6, 14

Your answer: _____

66. working-memory-s07-q06

Remember: Anna scored 12, Ben scored 9, Chloe scored 15. Who scored closest to 11?

- A. Ben
- B. Chloe
- C. Anna
- D. Anna and Ben are equally close

Your answer: _____

67. working-memory-s07-q07

Hold these three times in mind: bus at 09:20, train at 09:45, tram at 09:35. Which departs second?

- A. Bus
- B. Tram
- C. Train
- D. They depart together

Your answer: _____

68. working-memory-s07-q08

> Study text. Read this, then cover it before answering. Study this stock note, then continue: shelf A holds 14 tins, shelf B holds 8 tins.

From memory, how many tins must move from shelf A to shelf B for the two shelves to hold equal numbers?

- A. 2
- B. 4
- C. 6
- D. 3

Your answer: _____

69. working-memory-s07-q09

Keep the number 27 in mind. Now compute 6 x 4. Is the held number larger, smaller, or equal to the result, and by how much?

- A. Larger by 3
- B. Smaller by 3
- C. They are equal
- D. Larger by 4

Your answer: _____

70. working-memory-s07-q10

Hold these exchange values: 1 token = 3 stars; 1 star = 2 coins. How many coins is 2 tokens worth?

- A. 6
- B. 10
- C. 8
- D. 12

Your answer: _____

Substitutions and rule mapping

Memorise a small code or rule, then apply it to new material without writing anything down.

71. working-memory-s08-q01

Use this code: star = 4, moon = 7. What is star + moon + star?

- A. 11
- B. 15
- C. 18
- D. 14

Your answer: _____

72. working-memory-s08-q02

Apply the rule 'swap every A with O' to the word ALARM. What results?

- A. OLORM
- B. OLARM
- C. ALORM
- D. ORLOM

Your answer: _____

73. working-memory-s08-q03

Hold this mapping: 1 = D, 2 = B, 3 = F. Decode the sequence 3 - 1 - 2.

- A. F, B, D
- B. D, F, B
- C. F, D, B
- D. B, D, F

Your answer: _____

74. working-memory-s08-q04

Apply the rule 'shift each letter one place forward in the alphabet' to the word BEE. What do you get?

- A. CFF
- B. BFF
- C. CEE
- D. DGG

Your answer: _____

75. working-memory-s08-q05

Use the code: triangle means add 10, square means subtract 4. Starting from 6, apply: triangle, square, triangle. What is the result?

- A. 20
- B. 24
- C. 18
- D. 22

Your answer: _____

76. working-memory-s08-q06

Hold this mapping: cat becomes dog, dog becomes bird, bird becomes cat. Apply the mapping twice, starting from 'cat'. What do you get?

- A. Cat
- B. Dog
- C. Bird
- D. Fish

Your answer: _____

77. working-memory-s08-q07

Substitute digits for letters using A = 1, B = 2, C = 3, D = 4. What is the value of the word CAB added up?

- A. 6
- B. 7
- C. 5
- D. 8

Your answer: _____

78. working-memory-s08-q08

Apply this rule to the sequence 2, 5, 8: replace each even number with E and each odd number with O. What is the result?

- A. O, E, O
- B. E, O, E
- C. E, E, O
- D. O, O, E

Your answer: _____

79. working-memory-s08-q09

Hold both rules: rule one doubles a number; rule two adds 3. Apply rule one, then rule two, then rule one again, starting from 4. What is the result?

- A. 19
- B. 25
- C. 22
- D. 16

Your answer: _____

80. working-memory-s08-q10

Use the cipher 'each letter of the coded message maps back to the previous letter of the alphabet' to decode the message HBUF. What word appears?

- A. FETE
- B. HAVE
- C. GAZE
- D. GATE

Your answer: _____

Tracking several things at once

Follow two or more changing quantities, positions, or states through a short scenario.

81. working-memory-s09-q01

Two jars start empty. You add 3 marbles to jar A, 2 to jar B, then move 1 marble from A to B. How many marbles are in jar B now?

- A. 2
- B. 4
- C. 3
- D. 5

Your answer: _____

82. working-memory-s09-q02

Track three runners. Amir starts 1st, Beth 2nd, Cara 3rd. Beth overtakes Amir; then Cara overtakes Amir. Who is now 2nd?

- A. Amir
- B. Beth
- C. Nobody: the order is unchanged
- D. Cara

Your answer: _____

83. working-memory-s09-q03

A scoreboard starts at Home 0, Away 0. Home scores twice, Away scores once, Home scores once more, Away scores twice. What is the final score?

- A. Home 3, Away 3
- B. Home 3, Away 2
- C. Home 2, Away 3
- D. Home 4, Away 2

Your answer: _____

84. working-memory-s09-q04

> Study text. Read this, then cover it before answering. Study these starting values, then continue: kettle = 5, toaster = 2.

From memory, add 3 to the kettle value and double the toaster value. What are the new values?

- A. Kettle 7, toaster 4
- B. Kettle 8, toaster 4
- C. Kettle 8, toaster 5
- D. Kettle 6, toaster 4

Your answer: _____

85. working-memory-s09-q05

Follow the swaps. Cups start in order: red, blue, green (left to right). Swap the left and middle cups; then swap the middle and right cups. What is the order now, left to right?

- A. Blue, green, red
- B. Green, blue, red
- C. Red, green, blue
- D. Blue, red, green

Your answer: _____

86. working-memory-s09-q06

Keep two tallies while reading: count words starting with S, and words ending with T. List: SALT, STAR, NET, SOFT, MAP. What are the two tallies?

- A. 3 and 2
- B. 2 and 3
- C. 3 and 3
- D. 4 and 2

Your answer: _____

87. working-memory-s09-q07

A library cart has 10 books. At the first stop, 4 are removed and 2 added. At the second stop, half the books are removed. How many books remain?

- A. 5
- B. 4
- C. 6
- D. 3

Your answer: _____

88. working-memory-s09-q08

Track the letter and the number together. Start with C3. Each step moves the letter one forward in the alphabet and the number one up: step once, then twice more. What do you reach?

- A. E5
- B. F7
- C. G6
- D. F6

Your answer: _____

89. working-memory-s09-q09

Three switches are all off. You flip switch 1, flip switch 2, flip switch 1 again, then flip switch 3. Which switches end up on?

- A. Switches 1 and 2
- B. Switches 2 and 3
- C. Switch 2 only

- D. All three

Your answer: _____

90. working-memory-s09-q10

Update two accounts in your head. Account P starts with £40, account Q with £25. Transfer £10 from P to Q, then Q pays £15 out. Which account now holds more, and how much does it hold?

- A. Q, with £35
- B. P, with £40
- C. Q, with £20
- D. P, with £30

Your answer: _____

Layered hold-and-transform challenges

The hardest set: combine studied material, multiple rules, and several transformations in one item.

91. working-memory-s10-q01

> Study text. Read this, then cover it before answering. Study this rule set, then continue: start = 9; rule X doubles the number; rule Y subtracts 4; apply the rules in the order X, Y, X.

From memory, what is the final number?

- A. 24
- B. 28
- C. 32
- D. 26

Your answer: _____

92. working-memory-s10-q02

Hold everything in your head: four parcels weigh 2 kg, 5 kg, 3 kg, and 6 kg, in that order. Swap the middle two weights, then add the first and third weights of the new order. What is the result?

- A. 8
- B. 5
- C. 7
- D. 9

Your answer: _____

93. working-memory-s10-q03

Work entirely in your head: reverse the digits of 316, then subtract the smallest digit of the original number from the result. What number do you get?

- A. 612
- B. 613
- C. 610
- D. 615

Your answer: _____

94. working-memory-s10-q04

Follow the full chain: start with the word PLANET; remove the last letter; reverse what remains. What is the second letter of the result?

- A. E
- B. A
- C. L
- D. N

Your answer: _____

95. working-memory-s10-q05

> Study text. Read this, then cover it before answering. Study this table, then continue: Monday = 4 deliveries, Tuesday = 7, Wednesday = 5, Thursday = 1.

From memory, which two days together total exactly 9 deliveries?

- A. Tuesday and Thursday
- B. Monday and Tuesday
- C. Monday and Wednesday
- D. Wednesday and Thursday

Your answer: _____

96. working-memory-s10-q06

Hold three rules at once and apply them to the number 8: if it is even, add 5; if the result is odd, double it; if the final result is greater than 20, subtract 1. What do you get?

- A. 26
- B. 21
- C. 24
- D. 25

Your answer: _____

97. working-memory-s10-q07

Keep the sequence 9 - 2 - 6 - 4 in mind. Replace each digit with the difference between it and 10, keeping the order. What is the new sequence?

- A. 1, 8, 4, 6
- B. 1, 8, 6, 4
- C. 9, 8, 4, 6
- D. 1, 2, 4, 6

Your answer: _____

98. working-memory-s10-q08

> Study text. Read this, then cover it before answering. Study these seat swaps, then continue: Aisha, Ben, Kofi, and Lena sit in seats 1 to 4 in that order; then Aisha and Kofi swap seats; then Ben and Lena swap seats.

From memory, who ends up in seat 2?

- A. Ben
- B. Aisha
- C. Kofi
- D. Lena

Your answer: _____

99. working-memory-s10-q09

Do the whole calculation mentally, holding intermediate results: (the number of days in a week x 3) minus (the number of sides of a square x 2). What is the answer?

- A. 12
- B. 14
- C. 13
- D. 15

Your answer: _____

100. working-memory-s10-q10

The hardest hold: memorise the mapping red = 2, blue = 5, green = 7 as you read. A bag holds one red token, one blue token, and one green token. Halve the total value, then add the value of one red token. What is the final number?

- A. 10
- B. 8
- C. 9
- D. 11

Your answer: _____

Authored hints

This cognitive practice source does not publish authored hints. Every item is listed as missing a hint, and no hint text is generated or inferred.

100 worksheet items do not have an authored hint. No hint text was generated for them.

Answer key

> The answer key and worked explanations in this file belong only to this public, untimed educational practice source. No active aptitude suite or Novus Reasoning Challenge answer key is ever included in any download.

Working memory: hold, update, and manipulate: open practice pack answer key

Item	Choice	Answer
working-memory-s01-q01	C	17
working-memory-s01-q02	B	P
working-memory-s01-q03	B	Umbrella
working-memory-s01-q04	B	9

working-memory-s01-q05	A	5
working-memory-s01-q06	B	2
working-memory-s01-q07	D	15
working-memory-s01-q08	C	River
working-memory-s01-q09	A	B
working-memory-s01-q10	D	2
working-memory-s02-q01	C	8
working-memory-s02-q02	B	Brick
working-memory-s02-q03	D	S
working-memory-s02-q04	D	Carpet
working-memory-s02-q05	A	9
working-memory-s02-q06	C	Callum
working-memory-s02-q07	B	The second door on the right
working-memory-s02-q08	A	3
working-memory-s02-q09	B	Olive
working-memory-s02-q10	C	9
working-memory-s03-q01	C	1
working-memory-s03-q02	A	A
working-memory-s03-q03	B	3 then 5
working-memory-s03-q04	D	4
working-memory-s03-q05	A	6, 1, 8, 5
working-memory-s03-q06	B	X
working-memory-s03-q07	C	7
working-memory-s03-q08	D	4
working-memory-s03-q09	A	TNIM
working-memory-s03-q10	C	10
working-memory-s04-q01	B	10
working-memory-s04-q02	C	5
working-memory-s04-q03	A	6
working-memory-s04-q04	C	PART
working-memory-s04-q05	D	4
working-memory-s04-q06	B	7
working-memory-s04-q07	A	A = 4, B = 2
working-memory-s04-q08	D	29
working-memory-s04-q09	C	F
working-memory-s04-q10	D	11
working-memory-s05-q01	B	15
working-memory-s05-q02	B	RAINS
working-memory-s05-q03	A	7
working-memory-s05-q04	D	East

working-memory-s05-q05	C	3
working-memory-s05-q06	D	76
working-memory-s05-q07	A	O
working-memory-s05-q08	B	TSONE
working-memory-s05-q09	D	14
working-memory-s05-q10	A	49
working-memory-s06-q01	A	Harbour
working-memory-s06-q02	B	58
working-memory-s06-q03	C	Candle and Orange
working-memory-s06-q04	D	9
working-memory-s06-q05	C	T
working-memory-s06-q06	A	3 lemons
working-memory-s06-q07	B	7, 2, 5
working-memory-s06-q08	D	Green Door
working-memory-s06-q09	B	115
working-memory-s06-q10	A	Row F, Seat 12
working-memory-s07-q01	C	£8
working-memory-s07-q02	A	18
working-memory-s07-q03	B	Red and green
working-memory-s07-q04	D	14
working-memory-s07-q05	A	10, 6, 16
working-memory-s07-q06	C	Anna
working-memory-s07-q07	B	Tram
working-memory-s07-q08	D	3
working-memory-s07-q09	A	Larger by 3
working-memory-s07-q10	D	12
working-memory-s08-q01	B	15
working-memory-s08-q02	A	OLORM
working-memory-s08-q03	C	F, D, B
working-memory-s08-q04	A	CFF
working-memory-s08-q05	D	22
working-memory-s08-q06	C	Bird
working-memory-s08-q07	A	6
working-memory-s08-q08	B	E, O, E
working-memory-s08-q09	C	22
working-memory-s08-q10	D	GATE
working-memory-s09-q01	C	3
working-memory-s09-q02	D	Cara
working-memory-s09-q03	A	Home 3, Away 3
working-memory-s09-q04	B	Kettle 8, toaster 4

working-memory-s09-q05	A	Blue, green, red
working-memory-s09-q06	C	3 and 3
working-memory-s09-q07	B	4
working-memory-s09-q08	D	F6
working-memory-s09-q09	B	Switches 2 and 3
working-memory-s09-q10	D	P, with £30
working-memory-s10-q01	B	28
working-memory-s10-q02	C	7
working-memory-s10-q03	A	612
working-memory-s10-q04	D	N
working-memory-s10-q05	C	Monday and Wednesday
working-memory-s10-q06	D	25
working-memory-s10-q07	A	1, 8, 4, 6
working-memory-s10-q08	D	Lena
working-memory-s10-q09	C	13
working-memory-s10-q10	C	9

Worked explanations

working-memory-s01-q01: First digit 8 + last digit 9 = 17.

working-memory-s01-q02: With 5 letters, the middle (3rd) position holds P.

working-memory-s01-q03: Basket and Candle each have 6 letters; Umbrella has 8.

working-memory-s01-q04: Reading backward: 1 (1st), 5 (2nd), 9 (3rd).

working-memory-s01-q05: apple (3) + cherry (2) = 5.

working-memory-s01-q06: Circle appears twice: 1st and 3rd positions.

working-memory-s01-q07: Add as you go rather than at the end: 5 + 2 = 7, then 7 + 8 = 15. Keeping a running total lightens the memory load.

working-memory-s01-q08: Rehearsing the list once in order (lamp, river, stone) fixes the positions: River sat in the second slot.

working-memory-s01-q09: Replaying the sequence in order (T, F, B, X) shows B follows straight after F.

working-memory-s01-q10: Tally each colour as it passes: green appears in the 2nd and 4th positions, so twice.

working-memory-s02-q01: The sequence was 7, 1, 8, 4, counting along it puts 8 in the third position. Grouping digits into pairs (71, 84) makes short sequences easier to hold.

working-memory-s02-q02: The list ended with BRICK. The last item in a studied list is often the freshest in memory, a pattern called the recency effect.

working-memory-s02-q03: The order was G, M, S, K, V, so the third letter was S. Middle items are the hardest to recall, which makes them worth an extra rehearsal while studying.

working-memory-s02-q04: The studied list was spoon, ladder, candle, marble, ribbon, carpet never appeared. Checking each option against your mental list one at a time avoids false recognition.

working-memory-s02-q05: The sequence 3, 9, 9, 2, 6 repeats only the 9, in the second and third positions. Noticing a repeat while studying gives you a strong anchor for later recall.

working-memory-s02-q06: The order was Priya, Callum, Nadia, Tomas. Callum came directly before Nadia. Replaying the list as a spoken rhythm helps preserve neighbouring pairs.

working-memory-s02-q07: The instruction specified the second door on the right. Turning directions into a quick mental walk-through makes them far easier to retain than the words alone.

working-memory-s02-q08: The sequence mixed Q, R, and Z with the digits 4 and 7, three letters in total. Sorting items into categories while studying is itself a working-memory exercise.

working-memory-s02-q09: Counting along violet, amber, teal, coral, olive, slate places olive fifth. With six items, chunking into two groups of three keeps the positions straight.

working-memory-s02-q10: The sequence ended ... 1, 9, 3, so the second-to-last number was 9. Seven digits sits near the limit of most people's span: chunking (62, 75, 193) helps.

working-memory-s03-q01: Reversing 4 - 1 - 7 gives 7 - 1 - 4. A useful shortcut: reversing any sequence leaves the middle element exactly where it was, so it is still 1.

working-memory-s03-q02: The first letter of a reversed sequence is simply the last letter of the original. Here that is A, with no need to reverse the whole thing.

working-memory-s03-q03: Reading 2 - 8 - 5 - 3 from the end gives 3, 5, 8, 2, so the first two digits backwards are 3 then 5. Working from the tail end is easier if you rehearse the sequence once forwards first.

working-memory-s03-q04: Reversed, the sequence reads 7, 2, 6, 4, 9, putting 4 in the fourth position. Equivalently, the fourth-from-the-front of the reversed list is the fourth-from-the-back of the original.

working-memory-s03-q05: The studied sequence 5, 8, 1, 6 reversed is 6, 1, 8, 5. Doing this from memory combines storage and manipulation: the core of working memory.

working-memory-s03-q06: Swapping the ends of L - D - Q - J - X moves X to the front and L to the back, so the sequence now starts with X.

working-memory-s03-q07: Sorted, the digits run 2, 3, 7, 9. The third is 7. Re-sorting held material is harder than reversing because every element changes position.

working-memory-s03-q08: Moving the 6 to the end gives 1, 8, 4, 5, 6, whose middle (third) digit is 4. Visualising the digits sliding one place left makes the shift concrete.

working-memory-s03-q09: Reversing the order gives OAK, MINT, PEAR, so the middle word is still MINT, and spelt backwards it reads TNIM. Handling two transformations in a row is a genuine two-step hold.

working-memory-s03-q10: The reversed sequence starts 4, 6, and 4 + 6 = 10. Notice you only ever needed the last two digits of the original, spotting shortcuts reduces the load.

working-memory-s04-q01: Update after every step: 5 + 3 = 8, 8 - 2 = 6, 6 + 4 = 10. Discard each old value as you go, only the current total needs holding.

working-memory-s04-q02: Apple has a and e (2), kiwi has i and i (2), plum has u (1). A running tally reaches 5.

working-memory-s04-q03: Track the floor after each move: 3 up to 7, down to 5, up to 6. Picturing the lift moving makes each update easier to hold than raw arithmetic.

working-memory-s04-q04: Only the first letter changes: C becomes P while A-R-T stay put, giving PART. Editing one element of a held word is a small but genuine act of updating.

working-memory-s04-q05: The evens are 4, 2, 6, and 8, a tally that ticks up to 4. Saying the count in your head at each hit stops it slipping while you scan the next number.

working-memory-s04-q06: Step by step: 20 halved is 10, plus 6 is 16, minus 9 is 7.

working-memory-s04-q07: LEFT appears four times and RIGHT twice, so A finishes on 4 and B on 2. Running two counters at once is what makes this harder than a single tally.

working-memory-s04-q08: Count down in steps: 50 to 43, to 36, to 29. Alternatively, 3 x 7 = 21 subtracted in

one go gives the same 29, but the step-by-step version is the memory workout.

working-memory-s04-q09: Follow each hop: B forward two is D, back one is C, forward three is F. Saying each intermediate letter aloud in your head keeps the chain intact.

working-memory-s04-q10: Update the stock after every movement: 12 - 5 = 7, 7 + 8 = 15, 15 - 6 = 9, 9 + 2 = 11. Four updates in a row is where unrehearsed totals start to slip.

working-memory-s05-q01: Doubling 6 gives 12, and DOG has 3 letters, so 12 + 3 = 15. The trick is holding the intermediate 12 while you count the letters.

working-memory-s05-q02: TRAIN loses its T to become RAIN, then gains an S at the end to become RAINS. Applying edits one at a time, in order, prevents the steps blurring together.

working-memory-s05-q03: 9 is odd, so add 5 to reach 14; 14 is even, so halve it to reach 7. Check each condition against the current value, not the starting one.

working-memory-s05-q04: North, right turn to east, right again to south, then a left turn from south faces you east. Imagining yourself physically rotating keeps each turn anchored.

working-memory-s05-q05: TABLE, DESK, and SHELF each contain an E; CHAIR and LAMP do not, so the count is 3. Holding the rule steady while scanning is the real work here.

working-memory-s05-q06: 47 reversed is 74, and 74 + 2 = 76. A common slip is adding 2 before reversing. The order of steps matters.

working-memory-s05-q07: M moves forward to N. N does not come after P, so the otherwise-branch applies: one more forward lands on O. Conditional steps demand you test before you move.

working-memory-s05-q08: Swapping the S and T of STONE gives TSONE, with the remaining letters O-N-E untouched. Focus the swap on exactly the two named positions.

working-memory-s05-q09: 14 is over 10, even, and not divisible by 6, so it passes all three tests. 12 and 18 fail the multiple-of-6 condition, and 9 is odd, checking every candidate against every held condition is the exercise.

working-memory-s05-q10: 3 x 4 = 12, then 12 - 5 = 7, then 7 x 7 = 49. The final squaring only works if the 7 was held accurately through the earlier steps.

working-memory-s06-q01: The studied word was HARBOUR. Doing arithmetic in between creates interference: attaching a quick image (boats in a harbour) protects the word against it.

working-memory-s06-q02: The studied number was 58. Counting backwards floods the same verbal rehearsal loop the number lives in, which is exactly why distractor tasks make digits slip.

working-memory-s06-q03: The studied pair was CANDLE and ORANGE. The near-miss alternatives share sounds or meanings with the originals. Precise recall beats gist here.

working-memory-s06-q04: The sequence was 4, 9, 1, so the middle number was 9. Note how easily the 17 from the distractor task tries to intrude on recall, recognising intrusions is part of the skill.

working-memory-s06-q05: Of the held letters, T comes later in the alphabet than K. The counting task in between forces you to protect the letters while attention is elsewhere.

working-memory-s06-q06: The studied note was 3 lemons. Binding the number to the item as a single picture, three lemons in a row, keeps quantity and object from drifting apart.

working-memory-s06-q07: The studied order was 7, 2, 5. Order errors, recalling the right digits in the wrong sequence, are the most common failure once a distractor intervenes.

working-memory-s06-q08: The studied phrase was GREEN DOOR. Visualising an actual green door makes the pairing far more robust than rehearsing the two words separately.

working-memory-s06-q09: 34 + 81 = 115. This item stacks interference and computation: the studied numbers must survive the multiplication before you can even start adding them.

working-memory-s06-q10: The studied allocation was Row F, Seat 12. The wrong options transpose or nudge one detail each. Exactly the errors interference tends to produce with letter-number pairs.

working-memory-s07-q01: One tea (£2) plus two scones (2 x £3 = £6) totals £8. The juice price is a deliberate extra load. Part of the skill is holding values you end up not needing.

working-memory-s07-q02: Substitute first, then compute: (5 x 2) + 8 = 10 + 8 = 18. Translating each symbol before starting the arithmetic keeps the two jobs from colliding.

working-memory-s07-q03: Red (4 kg) plus green (5 kg) makes exactly 9 kg; the other pairs give 11 kg and 12 kg. Testing pairs systematically stops you re-checking combinations you have already ruled out.

working-memory-s07-q04: From the studied values, 6 + 9 - 1 = 14. The recall and the arithmetic are separate steps: retrieve all three numbers first, then compute.

working-memory-s07-q05: Doubling each of 5, 3, 8 in turn gives 10, 6, 16. The challenge is keeping the already-transformed digits fixed while you work on the next one.

working-memory-s07-q06: The distances from 11 are: Anna 1, Ben 2, Chloe 4, so Anna is closest. Converting each held score into a distance is the manipulation step.

working-memory-s07-q07: Mentally re-ordering the times gives 09:20, 09:35, 09:45. The tram's 09:35 departure is second. The list arrives unsorted on purpose.

working-memory-s07-q08: The 22 tins split equally as 11 each, so shelf A must pass 3 of its 14 across. Equivalently, move half the difference: (14 - 8) ÷ 2 = 3.

working-memory-s07-q09: 6 x 4 = 24, and the held 27 exceeds it by 3. The held number must survive the multiplication intact before the comparison can happen.

working-memory-s07-q10: Chain the conversions: 2 tokens = 6 stars, and 6 stars = 12 coins. Two-step unit chains require holding the middle quantity just long enough to convert it again.

working-memory-s08-q01: Substituting gives 4 + 7 + 4 = 15. Reading the symbols as their numbers in one smooth pass is quicker than translating each one separately.

working-memory-s08-q02: ALARM contains two As, in the first and third positions, and replacing both gives OLORM. Scanning for every occurrence, not just the first, is the point of the rule.

working-memory-s08-q03: Applying the mapping digit by digit, 3 becomes F, 1 becomes D, and 2 becomes B, so the decoded sequence is F, D, B, keeping the original order.

working-memory-s08-q04: Each letter moves forward once: B becomes C and each E becomes F, giving CFF. Apply the shift uniformly: every letter, exactly one place.

working-memory-s08-q05: Follow the symbols in order: 6 + 10 = 16, 16 - 4 = 12, 12 + 10 = 22. You are holding both the code and a running total at once. A genuine dual load.

working-memory-s08-q06: One application turns cat into dog; applying the mapping again turns dog into bird. Chained substitutions require re-consulting the held rule at every step.

working-memory-s08-q07: C is 3, A is 1, and B is 2, so CAB totals 3 + 1 + 2 = 6. Decoding and summing in a single left-to-right pass keeps the load manageable.

working-memory-s08-q08: 2 is even (E), 5 is odd (O), and 8 is even (E), so the sequence becomes E, O, E. Judging each number afresh against the rule avoids drifting into alternation on autopilot.

working-memory-s08-q09: The chain runs 4 doubled to 8, plus 3 to 11, doubled again to 22. Keeping two named rules and a running value alive together is the heart of rule-based working memory.

working-memory-s08-q10: Stepping each coded letter back one place turns H into G, B into A, U into T, and F into E, spelling GATE. Decoding letter by letter while holding the partial answer is the exercise.

working-memory-s09-q01: Jar B receives 2 marbles, then 1 more from jar A, finishing on 3. A transfer changes both jars at once: update the two totals together.

working-memory-s09-q02: After Beth passes Amir the order is Beth, Amir, Cara; when Cara then passes Amir it becomes Beth, Cara, Amir. Re-stating the full order after every overtake prevents position slips.

working-memory-s09-q03: Home scores 2 + 1 = 3 goals and Away scores 1 + 2 = 3, so the match ends level at three each. Keeping two independent tallies is the load here.

working-memory-s09-q04: The kettle becomes 5 + 3 = 8 and the toaster becomes 2 x 2 = 4. Each value gets a different operation, so pairing the right rule with the right item is half the task.

working-memory-s09-q05: The first swap gives blue, red, green; the second swaps the middle and right cups to give blue, green, red. Visualising actual cups sliding makes each swap easier to hold than the colour names alone.

working-memory-s09-q06: SALT, STAR, and SOFT start with S (three words); SALT, NET, and SOFT end with T (three words). Note that SALT and SOFT legitimately count towards both tallies.

working-memory-s09-q07: After the first stop the cart holds 10 - 4 + 2 = 8 books; halving at the second stop leaves 4. The halving must apply to the updated total, not the starting one.

working-memory-s09-q08: Three steps in total move C3 to D4, then E5, then F6. Letter and number must advance in lockstep: updating one and forgetting the other is the classic error.

working-memory-s09-q09: Switch 1 is flipped twice, returning it to off, while switches 2 and 3 are each flipped once and stay on. An even number of flips always cancels out.

working-memory-s09-q10: The transfer leaves P with £30 and lifts Q to £35; Q's £15 payment then drops it to £20, so P holds more with £30. The transfer touches both balances: the payment only one.

working-memory-s10-q01: From the studied rules: 9 doubled is 18, minus 4 is 14, doubled again is 28. Everything (start value, both rules, and their order) had to be recalled before computing.

working-memory-s10-q02: Swapping the middle two gives 2, 3, 5, 6, and the first plus third of that new order is 2 + 5 = 7. The reordering must fully settle before the addition starts.

working-memory-s10-q03: 316 reversed is 613, and the smallest digit of the original (1) brings it to 612. Both the reversed number and a fact about the original must be held simultaneously.

working-memory-s10-q04: PLANET without its last letter is PLANE, which reversed reads ENALP, and its second letter is N. Each transformation output becomes the next step's input.

working-memory-s10-q05: Monday's 4 plus Wednesday's 5 makes exactly 9; the other pairings give 8, 11, and 6. Four recalled values must all stay available while you test combinations.

working-memory-s10-q06: 8 is even so it becomes 13; 13 is odd so it doubles to 26; 26 exceeds 20 so it drops to 25. Each condition tests the current value, so the chain must be walked strictly in order.

working-memory-s10-q07: Taking each digit from 10 gives 10 - 9 = 1, 10 - 2 = 8, 10 - 6 = 4, and 10 - 4 = 6, so the sequence becomes 1, 8, 4, 6. Transformed digits must not contaminate the ones still waiting.

working-memory-s10-q08: After the first swap the seats hold Kofi, Ben, Aisha, Lena; the second swap exchanges Ben and Lena, leaving Lena in seat 2. Re-listing all four seats after each swap keeps the state accurate.

working-memory-s10-q09: 7 days x 3 = 21 and 4 sides x 2 = 8, so 21 - 8 = 13. Retrieving the everyday facts, computing both parts, and holding the first result through the second is the full layered load.

working-memory-s10-q10: The tokens total 2 + 5 + 7 = 14; halved that is 7, and adding the red token's value of 2 gives 9. The colour mapping must survive right to the final step, because red is needed again at the end.

Source: https://learn.novusstreamsolutions.com/cognitive-skills/working-memory