



Problem Solving & Reasoning

Name: _____

Grade: 6

Date: _____

Solve multi-step problems, analyze patterns, use logic, estimate, and check for errors. Show your reasoning and strategy.

Part 1 · Multi-Step Word Problems

STEPS

1. A store sold 245 pens, 168 pencils, and 92 markers. Total items = _____

2. A bus travels 120 km in 2 h, then 90 km in 1.5 h. Average speed = _____ km/h

3. A box has 8 packs, each pack 12 cards. 5 boxes total. Cards = _____

4. A recipe needs 2.5 cups flour, 1.75 cups sugar, 0.5 cups cocoa. Total = _____ cups

5. A tank holds 60 L. Used 18 L, then 7 L. Liters left = _____

6. A runner covers 2.5 km, then 1.75 km, then 0.8 km. Total = _____ km

Part 2 · Patterns & Sequences

PATTERN

7. Sequence: 4, 7, 10, 13, ____ Next = _____ ; rule: add _____

8. Sequence: 2, 6, 18, 54, __ Next = _____ ; rule: $\times$ _____

9. Term n rule: $T(n)=3n+2$. $T(6)=$ _____

10. If $T(n)=2n^2$, $T(5)=$ _____

11. Expression: "5 less than double x" = _____

12. Evaluate $4(a+3)$ when $a=5$: _____

Part 3 · Logical Reasoning LOGIC

13. Three numbers sum to 60. Two are 18 and 22. Third = _____

14. A number doubled then $+14 = 50$. Original number = _____

15. Product of two equal numbers is 49. Each number = _____

16. The mean of 7, 9, x, 13 is 10. Find x = _____

17. You subtract a number from 500 and get 312. Number subtracted = _____

18. Two consecutive multiples of 6 sum to 78. Larger multiple = _____

Part 4 · Estimation & Reasonableness EST

19. Estimate: $2.5 + 1.75 + 0.8 \approx$ _____

20. Estimate: $245 + 168 + 92 \approx$ _____

21. Is $120 + 90$ closer to 200 or 250? _____

22. Is $8 \times 12 \times 5$ closer to 500 or 600? _____

23. $2.5 \times 4.1 \approx$ _____

24. $60 - 18 - 7 \approx$ _____

Part 5 · Error Analysis FIX

25. Error: $2.5 + 1.75 + 0.8 = 5.05$. Correct & mistake: _____ / _____

26. Error: $245 + 168 + 92 = 495$. Correct & why: _____ / _____

27. Error: $8 \times 12 \times 5 = 480$. Correct & why: _____ / _____

Part 6 · Challenge & Reflection CHALLENGE

28. Sequence start 4 add 5 each time. 8th term = _____

29. Find n : $3n + 14 = 50 \rightarrow n =$ _____

(30. If $T(n)=2n^2$, solve $T(n)=32$. $n =$ _____

(31. Two numbers differ by 18 and sum to 82. Larger = _____

(32. Reflection: Most helpful strategy? _____

Answer Key

1. 505
2. 140
3. 480
4. 4.75
5. 35
6. 5.05
7. 16 ; 3
8. 162 ; 3
9. 20
10. 50
11. $2x-5$
12. 32
13. 20
14. 18
15. 7
16. 11
17. 188
18. 42
19. 5.05
20. 505
21. 600
22. 5.05
23. 35
24. 35
25. 5.05 / added not multiplied
26. 505 / added not multiplied
27. 480 / multiplied not added
28. 39
29. 12
30. 4
31. 50
32. Varies

Accept equivalent forms. Reflection varies.