Math Analogy Worksheet for Grades 1-3

Part 1 · Grade 1 Name: Class: Date:

Read A : B :: C : ? as "A is to B as C is to what". Find the rule, then write the answer in the box.

A Add 1. Write the missing number.

Example: 2 : 3 :: 5 : 6

1. 3 : 4 :: 7 : ?
2. 5 : 6 :: 9 : ?
3. 6 : 7 :: 12 : ?
4. 8 : 9 :: 14 : ?
5. 10 : 11 :: 16 : ?
6. 12 : 13 :: 19 : ?

B Add 2. Write the missing number.

Example: 3 : 5 :: 6 : 8

7. 4 : 6 :: 7 : ?
8. 5 : 7 :: 10 : ?
9. 8 : 10 :: 11 : ?
10. 9 : 11 :: 15 : ?
11. 12 : 14 :: 18 : ?
12. 6 : 8 :: 13 : ?

C Double the number. Write the missing number.

Example: 3 : 6 :: 4 : 8

13. 2 : 4 :: 6 : ?
14. 5 : 10 :: 7 : ?
15. 4 : 8 :: 9 : ?
16. 6 : 12 :: 8 : ?
17. 3 : 6 :: 10 : ?
18. 7 : 14 :: 5 : ?

Doubling, Halving and Skip Counting

Part 2 · Grade 2

D Double the number.

Example: 7 : 14 :: 5 : 10

19. 8 : 16 :: 3 : ?
20. 9 : 18 :: 6 : ?
21. 10 : 20 :: 12 : ?
22. 11 : 22 :: 7 : ?
23. 12 : 24 :: 15 : ?
24. 13 : 26 :: 20 : ?

E Halve the number. Divide by 2.

Example: 10 : 5 :: 8 : 4

25. 12 : 6 :: 16 : ?
26. 14 : 7 :: 20 : ?
27. 18 : 9 :: 10 : ?
28. 22 : 11 :: 16 : ?
29. 30 : 15 :: 24 : ?
30. 40 : 20 :: 26 : ?

F Skip count. Add 5 each time.

Example: 5 : 10 :: 20 : 25

31. 10 : 15 :: 30 : ?
32. 15 : 20 :: 40 : ?
33. 25 : 30 :: 50 : ?
34. 35 : 40 :: 60 : ?
35. 20 : 25 :: 45 : ?
36. 55 : 60 :: 70 : ?

Part 3 · Grade 3

G Multiply. The rule is the same for all six.

Rule: multiply by 3

37. 2 : 6 :: 5 : ?

38. 4 : 12 :: 7 : ?

39. 6 : 18 :: 8 : ?

40. 9 : 27 :: 10 : ?

41. 3 : 9 :: 11 : ?

42. 5 : 15 :: 12 : ?

H Divide. The rule is the same for all six.

Rule: divide by 4

43. 8 : 2 :: 16 : ?

44. 12 : 3 :: 24 : ?

45. 20 : 5 :: 32 : ?

46. 28 : 7 :: 40 : ?

47. 36 : 9 :: 48 : ?

48. 16 : 4 :: 44 : ?

I Find the rule yourself, then circle the answer.

Nobody tells you the rule here. It always comes from the first pair.

49. 3 : 15 :: 4 : ? a) 16 b) 20 c) 9

50. 24 : 6 :: 16 : ? a) 4 b) 8 c) 10

51. 7 : 28 :: 5 : ? a) 20 b) 25 c) 12

52. 45 : 9 :: 30 : ? a) 5 b) 6 c) 21

Write the Rule, Then Make Your Own

Part 4 · All grades

J Both pairs are complete. Write the rule on the line.

Example: 3 : 9 :: 5 : 15 Rule: multiply by 3

53. **4 : 8 :: 9 : 18** Rule: _____

54. **20 : 15 :: 12 : 7** Rule: _____

55. **6 : 24 :: 3 : 12** Rule: _____

56. **30 : 10 :: 18 : 6** Rule: _____

57. **7 : 9 :: 14 : 16** Rule: _____

58. **50 : 25 :: 16 : 8** Rule: _____

59. **2 : 10 :: 4 : 20** Rule: _____

60. **36 : 6 :: 24 : 4** Rule: _____

K Now write two analogies of your own.

Pick a rule first, then build the question around it.

61. _____

Rule: _____

62. _____

Rule: _____

Answer Key

Answer key

For parents and teachers · remove this page before giving the worksheet to the child.

A	Add 1	1. 8 2. 10 3. 13 4. 15 5. 17 6. 20
B	Add 2	7. 9 8. 12 9. 13 10. 17 11. 20 12. 15
C	Double	13. 12 14. 14 15. 18 16. 16 17. 20 18. 10
D	Double	19. 6 20. 12 21. 24 22. 14 23. 30 24. 40
E	Halve	25. 8 26. 10 27. 5 28. 8 29. 12 30. 13
F	Add 5	31. 35 32. 45 33. 55 34. 65 35. 50 36. 75
G	Multiply by 3	37. 15 38. 21 39. 24 40. 30 41. 33 42. 36
H	Divide by 4	43. 4 44. 6 45. 8 46. 10 47. 12 48. 11
I	Find the rule	49. b) 20 (x5) 50. a) 4 (div 4) 51. a) 20 (x4) 52. b) 6 (div 5)
J	Write the rule	53. double 54. subtract 5 55. multiply by 4 56. divide by 3 57. add 2 58. halve 59. multiply by 5 60. divide by 6

Note for parents

Section I is the one to spend time on. Sections A to H tell the child the rule, but a real Olympiad question never does. Remind them the rule always comes from the FIRST pair, never from A and C. A wrong answer is almost always the right method used on the wrong pair, so have the child test their rule back on the first pair before writing anything in the box.