

ARITHMETIC & NUMBER SENSE

1 ARITHMETIC

What is the value of $3 + 4 \times 2 - 1$?

☐ A 13

☐ B 10

☐ C 14

☐ D 9

2 ARITHMETIC

Which of the following is *not* a prime number?

☐ A 11

☐ B 13

☐ C 21

☐ D 17

3 ARITHMETIC

What is the greatest common factor (GCF) of 24 and 36?

☐ A 6

☐ B 8

☐ C 12

☐ D 4

4 ARITHMETIC

What is the least common multiple (LCM) of 4 and 6?

☐ A 24

☐ B 12

☐ C 8

☐ D 18

5 NUMBER THEORY

When 47 is divided by 5, what is the remainder?

☐ A 1

☐ B 2

☐ C 3

☐ D 7

6 ARITHMETIC

What is $-3 \times (-4) + (-2)$?

☐ A 14

☐ B 10

☐ C -14

☐ D -10

7 ARITHMETIC

What is the value of $|-8| - |3| + |-2|$?

A 7

B -7

C 13

D 3

8 NUMBER THEORY

How many integers between 1 and 50 (inclusive) are divisible by both 3 and 4?

A 2

B 3

C 4

D 5

9 ARITHMETIC

If $a * b = a^2 - b$, what is $3 * 4$?

A 5

B 7

C 11

D 13

10 NUMBER THEORY

What is the sum of all prime numbers less than 20?

A 58

B 60

C 77

D 56

11 ARITHMETIC

What is $2^3 \times 3^2 \div 6$?

A 12

B 9

C 18

D 6

12 NUMBER THEORY

What is the units digit of 7^{43} ?

A 1

B 3

C 7

D 9

13 FRACTIONS

What is $\frac{2}{3} + \frac{3}{4}$?

A $\frac{5}{7}$

B $\frac{17}{12}$

C $\frac{1}{2}$

D $\frac{5}{12}$

14 FRACTIONS

Which fraction is equivalent to 0.375 ?

A $\frac{3}{8}$

B $\frac{3}{7}$

C $\frac{1}{3}$

D $\frac{5}{8}$

15 FRACTIONS

What is $(\frac{3}{4}) \times (\frac{8}{9}) \div (\frac{2}{3})$?

A 1

B $\frac{3}{2}$

C $\frac{2}{3}$

D $\frac{4}{3}$

16 FRACTIONS

If $x = \frac{5}{6}$ and $y = \frac{3}{4}$, what is $x - y$?

A $\frac{1}{12}$

B $\frac{1}{6}$

C $\frac{7}{12}$

D $\frac{2}{10}$

17 FRACTIONS

What is $3 \div (\frac{3}{5})$?

A $\frac{9}{5}$

B 5

C 1

D $\frac{3}{5}$

18 FRACTIONS

Arrange in order from least to greatest: $\frac{2}{3}, \frac{3}{5}, \frac{5}{8}$.

A $\frac{3}{5}, \frac{5}{8}, \frac{2}{3}$

B $\frac{2}{3}, \frac{3}{5}, \frac{5}{8}$

C $\frac{5}{8}, \frac{3}{5}, \frac{2}{3}$

D $\frac{3}{5}, \frac{2}{3}, \frac{5}{8}$

19 FRACTIONS

A jar is $\frac{2}{5}$ full. After removing $\frac{1}{3}$ of what's there, what fraction of the jar is full?

A $\frac{1}{15}$

B $\frac{4}{15}$

C $\frac{2}{15}$

D $\frac{1}{5}$

20 DECIMALS

What is 0.6×0.04 ?

A 0.024

B 0.24

C 2.4

D 0.0024

21 FRACTIONS

What is $\frac{1}{(1 + \frac{1}{(1+\frac{1}{2})})}$?

A $\frac{3}{5}$

B $\frac{2}{5}$

C $\frac{5}{8}$

D $\frac{3}{8}$

22 FRACTIONS

If $\frac{1}{x} + \frac{1}{y} = \frac{1}{4}$ and $x=6$, what is y ?

A 10

B 12

C 8

D 6

RATIOS & PROPORTIONS

23 RATIOS

A recipe calls for 2 cups of flour for every 3 cups of sugar. How many cups of sugar are needed for 8 cups of flour?

A 10

B 12

C 9

D 6

24 RATIOS

The ratio of boys to girls in a class is 3:5. If there are 24 boys, how many students are in the class?

A 40

B 56

C 64

D 48

25 RATIOS

If $a:b = 2:3$ and $b:c = 4:5$, what is $a:c$?

A 8:15

B 2:5

C 6:10

D 3:5

26 RATIOS

A map uses a scale of 1 inch = 40 miles. Two cities are 3.5 inches apart on the map. What is the actual distance?

A 120 miles

B 140 miles

C 160 miles

D 100 miles

27 RATIOS

Three numbers are in ratio 2:3:5. Their sum is 100. What is the largest number?

A 30

B 40

C 50

D 60

28 RATIOS

If 6 workers can build a wall in 10 days, how many days would 4 workers take to build the same wall?

A 12

B 15

C 18

D 20

29 RATIOS

A car travels 150 miles in 2.5 hours. At the same rate, how far does it travel in 4 hours?

A 200 miles

B 220 miles

C 240 miles

D 250 miles

30 RATIOS

Water flows into a tank at 8 liters/min and out at 5 liters/min. The tank holds 90 liters. Starting empty, how long to fill it?

A 25 min

B 30 min

C 18 min

D 11 min

31 RATIOS

The ages of A and B are in ratio 4:7. In 6 years, their ages will be in ratio 3:5. What is A's current age?

A 16

B 20

C 24

D 28

PERCENTAGES**32** PERCENT

What is 35% of 80?

A 24

B 28

C 32

D 35

33 PERCENT

15 is what percent of 60?

A 20%

B 25%

C 30%

D 40%

34 PERCENT

A shirt costs \$48 after a 20% discount. What was the original price?

☐ A \$57.60

☐ B \$60

☐ C \$64

☐ D \$58

35 PERCENT

A population grows from 200 to 250. What is the percent increase?

☐ A 20%

☐ B 25%

☐ C 50%

☐ D 30%

36 PERCENT

A store marks up an item 40%, then discounts it 20%. The net effect on price is:

☐ A +12%

☐ B +20%

☐ C -20%

☐ D +8%

37 PERCENT

If 40% of a number is 56, what is 75% of the same number?

A 100

B 105

C 120

D 95

38 PERCENT

After two successive increases of 10% each, what is the total percent increase?

A 20%

B 21%

C 22%

D 20.5%

39 PERCENT

In a class of 30 students, 60% are girls. If 5 more boys join, what percent are now girls?

A 48%

B 51.4%

C 50%

D 52%

40

ALGEBRA

If $3x - 7 = 14$, what is x ?

A 7

B 9

C 5

D 3

41

ALGEBRA

If $2(x+3) = 18$, what is x ?

A 6

B 9

C 7

D 5

42

ALGEBRA

Solve: $5x - 2 = 3x + 8$.

A 3

B 4

C 5

D 6

43 ALGEBRA

If $\frac{x}{4} + 3 = 7$, what is x ?

A 12

B 16

C 20

D 8

44 ALGEBRA

What is the value of $x^2 - 2x + 1$ when $x = 5$?

A 14

B 16

C 21

D 24

45 ALGEBRA

A system: $x + y = 10$ and $x - y = 2$. Find x .

A 4

B 5

C 6

D 7

46 ALGEBRA

If $f(x) = 2x^2 - 3$, what is $f(-2)$?

A 5

B -5

C 11

D -11

47 ALGEBRA

Which value of x satisfies $|2x - 3| = 7$?

A $x=5$ only

B $x=-2$ only

C $x=5$ or $x=-2$

D $x=2$ or $x=-5$

48 ALGEBRA

If $x + 1/x = 3$, what is $x^2 + 1/x^2$?

A 7

B 9

C 6

D 11

49 ALGEBRA

The sum of two numbers is 15 and their product is 50. What are the numbers?

A 5 and 10

B 6 and 9

C 4 and 11

D 7 and 8

50 ALGEBRA

Solve for x : $x^2 - 5x + 6 = 0$.

A $x=2$ or $x=3$

B $x=1$ or $x=6$

C $x=-2$ or $x=-3$

D $x=5$ or $x=1$

51 ALGEBRA

If $3^x = 81$, what is x ?

A 3

B 4

C 5

D 6

52 ALGEBRA

If $y = 2x - 3$ and $y = 5$, what is x ?

A 1

B 4

C 2

D 5

53 ALGEBRA

The slope of the line through $(2, 5)$ and $(6, 13)$ is:

A 1

B 2

C 3

D 4

54 ALGEBRA

If $2^{x+1} = 4^{x-1}$, what is x ?

A 2

B 3

C 4

D 5

55

GEOMETRY

A rectangle has length 8 and width 5. What is its area?

☐ A 26☐ B 40☐ C 13☐ D 45**56**

GEOMETRY

A triangle has base 10 and height 6. What is its area?

☐ A 60☐ B 16☐ C 30☐ D 32**57**

GEOMETRY

A right triangle has legs of length 3 and 4. What is the length of the hypotenuse?

☐ A 5☐ B 6☐ C 7☐ D 12

58 GEOMETRY

The radius of a circle is 7. What is its area? (Use $\pi \approx 22/7$)

A 44

B 154

C 49π

D 22

59 GEOMETRY

Two parallel lines are cut by a transversal. One angle is 70° . What is the co-interior (same-side interior) angle?

A 70°

B 110°

C 90°

D 120°

60 GEOMETRY

The perimeter of a square is 36. What is its area?

A 81

B 72

C 64

D 36

61 GEOMETRY

A cube has side length 4. What is its volume?

A 16

B 48

C 64

D 96

62 GEOMETRY

In triangle ABC, angles A and B are 55° and 75° . What is angle C?

A 40°

B 50°

C 60°

D 45°

63 GEOMETRY

A cylinder has radius 3 and height 5. What is its volume? (Leave in terms of π)

A 15π

B 30π

C 45π

D 90π

64 GEOMETRY

A right triangle has a hypotenuse of 13 and one leg of 5. What is the other leg?

A 8

B 10

C 12

D 11

65 GEOMETRY

The area of a circle is 36π . What is its circumference?

A 12π

B 18π

C 6π

D 36π

66 GEOMETRY

A diagonal of a square has length $8\sqrt{2}$. What is the side length of the square?

A 4

B 6

C 8

D 16

67 GEOMETRY

Two similar triangles have sides in ratio 3:5. If the area of the smaller is 27, what is the area of the larger?

A 45

B 75

C 50

D 60

68 GEOMETRY

A cone has radius 6 and slant height 10. What is its lateral surface area? (Use π)

A 36π

B 60π

C 90π

D 120π

69 GEOMETRY

In a 30-60-90 triangle, the shortest side is 4. What is the hypotenuse?

A $4\sqrt{3}$

B 8

C $4\sqrt{2}$

D 6

70 GEOMETRY

A trapezoid has parallel bases of 8 and 14, and height 5. What is its area?

A 55

B 70

C 75

D 90

WORD PROBLEMS**71** WORD PROBLEMS

Maria has twice as many stickers as Jake. Together they have 54. How many does Maria have?

A 18

B 27

C 36

D 12

72 WORD PROBLEMS

A train travels at 60 mph. How long does it take to travel 210 miles?

A 3 hours

B 3.5 hours

C 4 hours

D 2.5 hours

73 WORD PROBLEMS

A store buys an item for \$30 and sells it for \$42. What is the percent profit?

A 28%

B 30%

C 40%

D 12%

74 WORD PROBLEMS

Two pipes fill a tank. Pipe A fills it in 6 hours, Pipe B in 4 hours. Together, how long?

A 2.4 hours

B 3 hours

C 5 hours

D 2 hours

75 WORD PROBLEMS

The average of 5 numbers is 20. If one number is removed and the new average is 18, what was the removed number?

A 26

B 28

C 30

D 22

76 WORD PROBLEMS

A tank is $\frac{3}{4}$ full. After removing 15 gallons it is $\frac{1}{2}$ full. How many gallons does the full tank hold?

A 45

B 60

C 75

D 90

77 WORD PROBLEMS

A box contains 4 red, 6 blue, and 2 green marbles. What is the probability of picking a blue marble?

A $\frac{1}{2}$

B $\frac{1}{3}$

C $\frac{1}{6}$

D $\frac{3}{5}$

78 WORD PROBLEMS

Two trains start from opposite ends of a 300-mile track at the same time. Train A goes 60 mph, Train B goes 90 mph. When do they meet?

A 1.5 hrs

B 2 hrs

C 2.5 hrs

D 3 hrs

79 STATISTICS

Find the mean of: 4, 7, 10, 13, 16 .

A 9

B 10

C 11

D 12

80 STATISTICS

Find the median of: 3, 7, 2, 9, 5, 8, 1 .

A 5

B 7

C 9

D 2

81 STATISTICS

Find the mode of: 4, 7, 3, 7, 2, 7, 4, 3, 4 .

A 3

B 4

C 7

D both 4 and 7

82 STATISTICS

The range of 12, 5, 9, 21, 3, 17 is:

☐ A 14

☐ B 16

☐ C 18

☐ D 19

83 STATISTICS

A student scores 72, 85, 91, and 68 on four tests. What score is needed on the 5th test for an average of 80?

☐ A 84

☐ B 88

☐ C 90

☐ D 82

84 PROBABILITY

A fair coin is flipped 3 times. What is the probability of getting exactly 2 heads?

☐ A $\frac{1}{4}$

☐ B $\frac{3}{8}$

☐ C $\frac{1}{2}$

☐ D $\frac{1}{8}$

85 PROBABILITY

Two dice are rolled. What is the probability the sum is 7?

☐ A $\frac{1}{6}$

☐ B $\frac{7}{36}$

☐ C $\frac{1}{9}$

☐ D $\frac{5}{36}$

SEQUENCES & PATTERNS

86 SEQUENCES

What is the 8th term in the sequence 3, 7, 11, 15, ... ?

☐ A 29

☐ B 31

☐ C 33

☐ D 27

87 SEQUENCES

Find the sum of the first 10 terms of 2, 4, 6, 8,

☐ A 90

☐ B 100

☐ C 110

☐ D 120

88 SEQUENCES

What is the next term in the geometric sequence 3, 6, 12, 24, ... ?

A 36

B 48

C 30

D 40

89 SEQUENCES

The first term of a geometric sequence is 5 and common ratio is 3. What is the 4th term?

A 45

B 60

C 90

D 135

90 SEQUENCES

In a sequence, each term is the sum of the two preceding terms. If the first two terms are 2 and 3, what is the 6th term?

A 20

B 21

C 23

D 18

91 SEQUENCES

The sum of an arithmetic sequence is 180 and it has 10 terms. The last term is 27. What is the first term?

A 6

B 8

C 9

D 11

EXPONENTS & ROOTS

92 EXPONENTS

Simplify: $x^3 \times x^4 \div x^2$.

A x^5

B x^9

C x^{24}

D x^7

93 EXPONENTS

What is $\sqrt{144}$?

A 11

B 12

C 13

D 14

94 EXPONENTS

Simplify: $(2^3)^2 \times 2^{-1}$.

A 32

B 64

C 128

D 16

95 EXPONENTS

What is $\sqrt{72}$ in simplest radical form?

A $6\sqrt{2}$

B $8\sqrt{3}$

C $4\sqrt{3}$

D $36\sqrt{2}$

96 EXPONENTS

If $x^{(1/2)} = 5$, what is x^2 ?

A 25

B 125

C 625

D 10

CHALLENGE PROBLEMS

97 MIXED - HARD

How many positive integers less than 100 are divisible by 2 or 3 but NOT both?

A 50

B 66

C 33

D 17

98 MIXED - HARD

The product of three consecutive even integers is 480. What is the smallest of the three?

A 6

B 8

C 10

D 4

99 MIXED - HARD

In how many ways can 3 students be chosen from a group of 7?

A 21

B 35

C 42

D 70

If $\log_2 (x) = 5$, what is x ?

A 10

B 16

C 32

D 64

ANSWER KEY — SSAT Math Master 100

1. A	2. C	3. C	4. B	5. B
6. B	7. A	8. C	9. A	10. A
11. A	12. C	13. B	14. A	15. A
16. A	17. B	18. A	19. B	20. A
21. A	22. B	23. B	24. C	25. A
26. B	27. C	28. B	29. C	30. B
31. C	32. B	33. B	34. B	35. B
36. A	37. B	38. B	39. A	40. A
41. A	42. C	43. B	44. B	45. C
46. A	47. C	48. A	49. A	50. A
51. B	52. B	53. B	54. B	55. B
56. C	57. A	58. B	59. B	60. A
61. C	62. B	63. C	64. C	65. A
66. C	67. B	68. B	69. B	70. A
71. C	72. B	73. C	74. A	75. B
76. B	77. A	78. B	79. B	80. A
81. B	82. C	83. A	84. B	85. A
86. B	87. B	88. B	89. D	90. C
91. C	92. A	93. B	94. A	95. A
96. C	97. A	98. B	99. B	100. C