

Generated Question Paper

1. What is the result of $15 + 7 - 2$?

- a) 10
- b) 20
- c) 24
- d) 18

■ Answer: 20

■ Explanation: Following the order of operations, $15 + 7 = 22$, then $22 - 2 = 20$.

2. What is the product of 8 and 6?

- a) 14
- b) 48
- c) 56
- d) 64

■ Answer: 48

■ Explanation: 8 multiplied by 6 equals 48.

3. What is the result of 36 divided by 4?

- a) 6
- b) 9
- c) 12
- d) 18

■ Answer: 9

■ Explanation: 36 divided by 4 equals 9.

4. What is the value of 5^3 ?

- a) 15
- b) 25
- c) 125
- d) 625

■ Answer: 125

■ Explanation: 5^3 means $5 * 5 * 5 = 125$.

5. What is the square root of 81?

- a) 7
- b) 8
- c) 9
- d) 10

■ Answer: 9

■ Explanation: The square root of 81 is 9 because $9 * 9 = 81$.

6. Solve for x: $2x + 5 = 11$

- a) 3
- b) 6
- c) 8
- d) 16

■ Answer: 3

■ Explanation: Subtract 5 from both sides: $2x = 6$. Then divide by 2: $x = 3$.

7. What is the percentage equivalent of the fraction $1/4$?

- a) 14%
- b) 25%
- c) 40%
- d) 75%

■ Answer: 25%

■ Explanation: $1/4$ is equal to 0.25, which is 25%.

8. What is 20% of 150?

- a) 10
- b) 20
- c) 30
- d) 40

■ Answer: 30

■ Explanation: 20% of 150 is $(20/100) * 150 = 30$.

9. What is the least common multiple (LCM) of 6 and 9?

- a) 3
- b) 18
- c) 54
- d) 108

■ Answer: 18

■ Explanation: The multiples of 6 are 6, 12, 18, 24... The multiples of 9 are 9, 18, 27... The least common multiple is 18.

10. What is the greatest common divisor (GCD) of 12 and 18?

- a) 2
- b) 3

- c) 6
- d) 12

■ Answer: 6

■ Explanation: The divisors of 12 are 1, 2, 3, 4, 6, 12. The divisors of 18 are 1, 2, 3, 6, 9, 18. The greatest common divisor is 6.

11. If a train travels at 60 mph for 3 hours, how far does it travel?

- a) 30 miles
- b) 60 miles
- c) 120 miles
- d) 180 miles

■ Answer: 180 miles

■ Explanation: Distance = Speed x Time = 60 mph * 3 hours = 180 miles.

12. What is the area of a rectangle with length 10cm and width 5cm?

- a) 15 cm²
- b) 25 cm²
- c) 50 cm²
- d) 100 cm²

■ Answer: 50 cm²

■ Explanation: Area of a rectangle = length x width = 10cm * 5cm = 50 cm².

13. What is the perimeter of a square with sides of 7cm?

- a) 14 cm
- b) 21 cm
- c) 28 cm
- d) 49 cm

■ Answer: 28 cm

■ Explanation: Perimeter of a square = 4 * side length = 4 * 7cm = 28 cm.

14. What is the volume of a cube with sides of 4cm?

- a) 12 cm³
- b) 16 cm³
- c) 64 cm³
- d) 256 cm³

■ Answer: 64 cm³

■ Explanation: Volume of a cube = side³ = 4cm * 4cm * 4cm = 64 cm³.

15. What is 0.75 as a fraction?

- a) $1/2$
- b) $1/4$
- c) $3/4$
- d) $2/3$

■ Answer: $3/4$

■ Explanation: 0.75 is equivalent to $75/100$, which simplifies to $3/4$.

16. What is the next number in the sequence: 2, 4, 6, 8, ?

- a) 9
- b) 10
- c) 11
- d) 12

■ Answer: 10

■ Explanation: This is an arithmetic sequence with a common difference of 2. The next number is $8 + 2 = 10$.

17. What is the value of π (pi) to one decimal place?

- a) 3.0
- b) 3.1
- c) 3.2
- d) 3.14

■ Answer: 3.1

■ Explanation: Pi is approximately 3.14159, rounded to one decimal place is 3.1.

18. Solve: $10 - 3 \times 2 + 1$

- a) 11
- b) 5
- c) 15
- d) 9

■ Answer: 5

■ Explanation: Following order of operations (multiplication before addition/subtraction): $10 - 6 + 1 = 5$.

19. What is $1/2 + 1/4$?

- a) $1/6$
- b) $1/3$
- c) $2/6$
- d) $3/4$

■ Answer: $3/4$

■ Explanation: Find a common denominator (4): $2/4 + 1/4 = 3/4$.

20. What is the sum of the angles in a triangle?

- a) 90 degrees
- b) 180 degrees
- c) 270 degrees
- d) 360 degrees

■ Answer: 180 degrees

■ Explanation: The sum of the interior angles of any triangle is always 180 degrees.

21. What is $-5 + 10$?

- a) -15
- b) -5
- c) 5
- d) 15

■ Answer: 5

■ Explanation: $10 - 5 = 5$

22. What is -3×-4 ?

- a) -12
- b) -7
- c) 7
- d) 12

■ Answer: 12

■ Explanation: A negative multiplied by a negative results in a positive.

23. What is 25% expressed as a decimal?

- a) 0.025
- b) 0.25
- c) 2.5
- d) 25

■ Answer: 0.25

■ Explanation: $25\% = 25/100 = 0.25$

24. What is the radius of a circle with a diameter of 14cm?

- a) 7cm
- b) 14cm
- c) 21cm
- d) 28cm

■ Answer: 7cm

■ Explanation: The radius is half the diameter: $14\text{cm} / 2 = 7\text{cm}$

25. If $x = 4$, what is the value of $3x + 5$?

- a) 7
- b) 12
- c) 17
- d) 27

■ Answer: 17

■ Explanation: Substitute $x = 4$: $3(4) + 5 = 12 + 5 = 17$

26. What is the mean of 2, 4, 6, and 8?

- a) 2
- b) 4
- c) 5
- d) 6

■ Answer: 5

■ Explanation: Mean = $(2 + 4 + 6 + 8) / 4 = 5$

27. What is the median of 1, 3, 5, 7, 9?

- a) 3
- b) 5
- c) 7
- d) 9

■ Answer: 5

■ Explanation: The median is the middle value when the numbers are arranged in order.

28. What is the mode of 2, 2, 3, 4, 4, 4, 5?

- a) 2
- b) 3
- c) 4
- d) 5

■ Answer: 4

■ Explanation: The mode is the value that appears most frequently.

29. Simplify: $2(x + 3)$

- a) $2x + 3$
- b) $2x + 6$
- c) $x + 6$
- d) $2x + 9$

■ Answer: $2x + 6$

■ Explanation: Distribute the 2: $2 * x + 2 * 3 = 2x + 6$

30. Solve for y: $y - 7 = 12$

- a) 5
- b) 7
- c) 12
- d) 19

■ Answer: 19

■ Explanation: Add 7 to both sides: $y = 19$

31. What is the area of a triangle with base 6cm and height 4cm?

- a) 10 cm^2
- b) 12 cm^2
- c) 20 cm^2
- d) 24 cm^2

■ Answer: 12 cm^2

■ Explanation: Area of a triangle = $(1/2) * \text{base} * \text{height} = (1/2) * 6\text{cm} * 4\text{cm} = 12 \text{ cm}^2$

32. What is $3/5$ as a percentage?

- a) 35%
- b) 50%
- c) 60%
- d) 75%

■ Answer: 60%

■ Explanation: $(3/5) * 100\% = 60\%$

33. If $a = 2$ and $b = 3$, what is the value of $a^2 + b^2$?

- a) 5
- b) 10
- c) 13
- d) 25

■ Answer: 13

■ Explanation: $2^2 + 3^2 = 4 + 9 = 13$

34. What is the reciprocal of $2/3$?

- a) $-2/3$
- b) $3/2$
- c) $2/3$

d) $-\frac{3}{2}$

■ Answer: $\frac{3}{2}$

■ Explanation: The reciprocal is found by flipping the fraction.

35. Solve: $5x - 10 = 25$

a) 3

b) 5

c) 7

d) 10

■ Answer: 7

■ Explanation: Add 10 to both sides: $5x = 35$. Then divide by 5: $x = 7$

36. What is the circumference of a circle with a radius of 5cm (use $\pi = 3.14$)?

a) 15.7 cm

b) 31.4 cm

c) 78.5 cm

d) 157 cm

■ Answer: 31.4 cm

■ Explanation: Circumference = $2\pi r = 2 * 3.14 * 5\text{cm} = 31.4\text{ cm}$

37. Simplify: $x^3 * x^2$

a) x

b) x^5

c) x^6

d) $2x^5$

■ Answer: x^5

■ Explanation: Add the exponents: $3 + 2 = 5$

38. What is $-5 + 12$?

a) -17

b) -7

c) 7

d) 17

■ Answer: 7

■ Explanation: $12 - 5 = 7$

39. What is $-8 - 3$?

a) -11

b) -5

c) 5

d) 11

■ Answer: -11

■ Explanation: $-8 + (-3) = -11$

40. What is $-6 * 4$?

a) -24

b) -2

c) 2

d) 24

■ Answer: -24

■ Explanation: A negative multiplied by a positive is a negative.

41. What is $15 / -3$?

a) -5

b) -3

c) 3

d) 5

■ Answer: -5

■ Explanation: A positive divided by a negative is a negative.

42. What is the value of x in the equation $3x - 6 = 9$?

a) 1

b) 3

c) 5

d) 9

■ Answer: 5

■ Explanation: Add 6 to both sides: $3x = 15$. Then divide by 3: $x = 5$.

43. What is $2/5 + 3/5$?

a) 1

b) $1/5$

c) $5/10$

d) $5/5$

■ Answer: 1

■ Explanation: $(2+3)/5 = 5/5 = 1$

44. What is $1/2 - 1/4$?

a) 0

b) $\frac{1}{4}$

c) $\frac{1}{2}$

d) $\frac{3}{4}$

■ Answer: $\frac{1}{4}$

■ Explanation: $(2-1)/4 = \frac{1}{4}$

45. What is $\frac{2}{3} * \frac{3}{4}$?

a) $\frac{1}{2}$

b) 1

c) $\frac{6}{12}$

d) $\frac{6}{7}$

■ Answer: $\frac{1}{2}$

■ Explanation: $(2*3)/(3*4) = \frac{6}{12} = \frac{1}{2}$

46. What is $\frac{1}{2}$ divided by $\frac{1}{4}$?

a) $\frac{1}{8}$

b) $\frac{1}{2}$

c) 1

d) 2

■ Answer: 2

■ Explanation: $(\frac{1}{2}) * (\frac{4}{1}) = \frac{4}{2} = 2$

47. If a circle has a diameter of 10cm, what is its radius?

a) 5cm

b) 10cm

c) 20cm

d) 100cm

■ Answer: 5cm

■ Explanation: Radius = Diameter / 2 = 10cm / 2 = 5cm

48. What is the circumference of a circle with a radius of 7cm (use $\pi \approx \frac{22}{7}$)?

a) 14cm

b) 22cm

c) 44cm

d) 154cm

■ Answer: 44cm

■ Explanation: Circumference = $2\pi r = 2 * (\frac{22}{7}) * 7\text{cm} = 44\text{cm}$

49. What is the area of a circle with a radius of 3cm (use $\pi \approx 3.14$)?

- a) 9.42cm^2
- b) 18.84cm^2
- c) 28.26cm^2
- d) 37.68cm^2

■ Answer: 28.26cm^2

■ Explanation: $\text{Area} = \pi r^2 = 3.14 * 3\text{cm} * 3\text{cm} \approx 28.26\text{cm}^2$

50. What is 10% of 250?

- a) 25
- b) 50
- c) 100
- d) 2500

■ Answer: 25

■ Explanation: $(10/100) * 250 = 25$

51. What is 50% of 80?

- a) 20
- b) 40
- c) 60
- d) 160

■ Answer: 40

■ Explanation: $(50/100) * 80 = 40$

52. What is 75% of 120?

- a) 30
- b) 60
- c) 90
- d) 150

■ Answer: 90

■ Explanation: $(75/100) * 120 = 90$

53. What is the simple interest on \$1000 at 5% per year for 2 years?

- a) \$50
- b) \$100
- c) \$250
- d) \$500

■ Answer: \$100

■ Explanation: $\text{Simple Interest} = (\text{Principal} * \text{Rate} * \text{Time})/100 = (1000 * 5 * 2)/100 = \100

54. If 3 apples cost \$1.50, how much does 1 apple cost?

- a) \$0.25
- b) \$0.50
- c) \$1.00
- d) \$1.50

■ Answer: \$0.50

■ Explanation: $\$1.50 / 3 = \0.50

55. Solve for y: $y/4 = 8$

- a) 2
- b) 4
- c) 12
- d) 32

■ Answer: 32

■ Explanation: Multiply both sides by 4: $y = 32$

56. What is the mean of 5, 10, 15, and 20?

- a) 10
- b) 12.5
- c) 15
- d) 50

■ Answer: 12.5

■ Explanation: $(5 + 10 + 15 + 20) / 4 = 12.5$

57. What is the median of 2, 5, 8, 11, 14?

- a) 5
- b) 8
- c) 11
- d) 14

■ Answer: 8

■ Explanation: The middle number in the ordered set is 8.

58. What is the mode of 1, 2, 2, 3, 4, 4, 4, 5?

- a) 2
- b) 3
- c) 4
- d) 5

■ Answer: 4

■ Explanation: 4 appears most frequently.

59. What is the result of $15 + 7 - 2 * 4$?

- a) 20
- b) 16
- c) 26
- d) 10

■ Answer: 16

■ Explanation: Following the order of operations (PEMDAS/BODMAS), multiplication comes before addition and subtraction: $15 + 7 - 8 = 16$

60. What is the value of 3^3 ?

- a) 6
- b) 9
- c) 27
- d) 81

■ Answer: 27

■ Explanation: 3^3 means $3 * 3 * 3 = 27$

61. What is the square root of 64?

- a) 4
- b) 8
- c) 16
- d) 32

■ Answer: 8

■ Explanation: $8 * 8 = 64$

62. What is the percentage of 20 out of 50?

- a) 10%
- b) 20%
- c) 40%
- d) 50%

■ Answer: 40%

■ Explanation: $(20/50) * 100\% = 40\%$

63. What is the fraction $1/4$ as a decimal?

- a) 0.14
- b) 0.25
- c) 0.4
- d) 0.75

■ Answer: 0.25

■ Explanation: 1 divided by 4 equals 0.25

64. If a triangle has angles of 45° , 45° , and x° , what is the value of x ?

- a) 45°
- b) 90°
- c) 135°
- d) 180°

■ Answer: 90°

■ Explanation: The sum of angles in a triangle is 180° . $45^\circ + 45^\circ + x^\circ = 180^\circ$, therefore $x = 90^\circ$

65. What is the area of a rectangle with length 8cm and width 5cm?

- a) 13cm^2
- b) 26cm^2
- c) 40cm^2
- d) 80cm^2

■ Answer: 40cm^2

■ Explanation: Area of a rectangle = length * width = $8\text{cm} * 5\text{cm} = 40\text{cm}^2$

66. What is the perimeter of a square with side length 7cm?

- a) 14cm
- b) 21cm
- c) 28cm
- d) 49cm

■ Answer: 28cm

■ Explanation: Perimeter of a square = $4 * \text{side length} = 4 * 7\text{cm} = 28\text{cm}$

67. What is 25% of 80?

- a) 10
- b) 20
- c) 40
- d) 60

■ Answer: 20

■ Explanation: $(25/100) * 80 = 20$

68. Solve for x : $x/3 = 9$

- a) 3
- b) 6
- c) 12

d) 27

■ Answer: 27

■ Explanation: Multiply both sides by 3: $x = 27$

69. What is the volume of a cube with side length 4cm?

a) 12cm^3

b) 16cm^3

c) 64cm^3

d) 256cm^3

■ Answer: 64cm^3

■ Explanation: Volume of a cube = $\text{side}^3 = 4\text{cm} * 4\text{cm} * 4\text{cm} = 64\text{cm}^3$

70. What is $-8 * -3$?

a) -24

b) -11

c) 11

d) 24

■ Answer: 24

■ Explanation: A negative multiplied by a negative results in a positive.

71. What is $15 - 22$?

a) -7

b) 7

c) 37

d) -37

■ Answer: -7

■ Explanation: Subtracting a larger number from a smaller number results in a negative number.

72. What is $3/5 + 1/5$?

a) $1/5$

b) $2/5$

c) $4/5$

d) $4/10$

■ Answer: $4/5$

■ Explanation: Add the numerators while keeping the denominator the same: $3/5 + 1/5 = 4/5$

73. What is $2/3 - 1/6$?

- a) $\frac{1}{6}$
- b) $\frac{1}{3}$
- c) $\frac{1}{2}$
- d) $\frac{5}{6}$

■ Answer: $\frac{1}{2}$

■ Explanation: Find a common denominator (6): $\frac{4}{6} - \frac{1}{6} = \frac{3}{6} = \frac{1}{2}$

74. What is 2.5×4 ?

- a) 6
- b) 8
- c) 10
- d) 100

■ Answer: 10

■ Explanation: 2.5 multiplied by 4 equals 10

75. What is 10 divided by 0.5?

- a) 2
- b) 5
- c) 10
- d) 20

■ Answer: 20

■ Explanation: 10 divided by 0.5 is the same as 10 multiplied by $\frac{2}{1}$ which equals 20

76. What is the average of 5, 10, and 15?

- a) 5
- b) 10
- c) 15
- d) 30

■ Answer: 10

■ Explanation: $(5 + 10 + 15) / 3 = 10$

77. If a car travels 120 miles in 2 hours, what is its average speed?

- a) 30 mph
- b) 60 mph
- c) 120 mph
- d) 240 mph

■ Answer: 60 mph

■ Explanation: Speed = Distance / Time = 120 miles / 2 hours = 60 mph

78. What is 10% of 200?

- a) 10
- b) 20
- c) 100
- d) 2000

■ Answer: 20

■ Explanation: $(10/100) * 200 = 20$

79. What is the next number in the sequence: 2, 4, 6, 8, ...?

- a) 9
- b) 10
- c) 11
- d) 12

■ Answer: 10

■ Explanation: This is an arithmetic sequence with a common difference of 2.

80. What is the next number in the sequence: 1, 3, 9, 27, ...?

- a) 30
- b) 36
- c) 81
- d) 100

■ Answer: 81

■ Explanation: This is a geometric sequence with a common ratio of 3.

81. Simplify: $5x + 2x - x$

- a) $5x$
- b) $6x$
- c) $7x$
- d) $8x$

■ Answer: $6x$

■ Explanation: Combine like terms: $5x + 2x - x = 6x$

82. What is the area of a circle with a radius of 5cm? (Use $\pi \approx 3.14$)

- a) 15.7cm^2
- b) 31.4cm^2
- c) 78.5cm^2
- d) 157cm^2

■ Answer: 78.5cm^2

■ Explanation: Area of a circle = $\pi r^2 = 3.14 * 5\text{cm} * 5\text{cm} \approx 78.5\text{cm}^2$

83. What is $5^2 + 4^2$?

- a) 9
- b) 25
- c) 41
- d) 81

■ Answer: 41

■ Explanation: $5^2 = 25$, $4^2 = 16$, $25 + 16 = 41$

84. What is the value of x in the equation $4x - 8 = 12$?

- a) 1
- b) 5
- c) 20
- d) 24

■ Answer: 5

■ Explanation: Add 8 to both sides: $4x = 20$. Divide both sides by 4: $x = 5$

85. If you have 12 apples and you eat 5, how many apples are left?

- a) 5
- b) 7
- c) 17
- d) 60

■ Answer: 7

■ Explanation: $12 - 5 = 7$

86. What is the result of $1/2 + 1/3$?

- a) $1/5$
- b) $2/5$
- c) $2/6$
- d) $5/6$

■ Answer: $5/6$

■ Explanation: Find a common denominator (6): $3/6 + 2/6 = 5/6$

87. What is the result of $3/4 - 1/2$?

- a) $1/4$
- b) $1/2$
- c) $2/4$
- d) 1

■ Answer: $1/4$

■ Explanation: Find a common denominator (4): $\frac{3}{4} - \frac{2}{4} = \frac{1}{4}$

88. What is the prime factorization of 24?

- a) 2×12
- b) 3×8
- c) $2^3 \times 3$
- d) $2 \times 3 \times 4$

■ Answer: $2^3 \times 3$

■ Explanation: 24 can be broken down into its prime factors as $2 \times 2 \times 2 \times 3 = 2^3 \times 3$

89. What is the value of 2 to the power of 5 (2^5)?

- a) 10
- b) 25
- c) 32
- d) 64

■ Answer: 32

■ Explanation: $2^5 = 2 * 2 * 2 * 2 * 2 = 32$

90. Convert 2.5 meters to centimeters.

- a) 25 cm
- b) 250 cm
- c) 2500 cm
- d) 0.025 cm

■ Answer: 250 cm

■ Explanation: 1 meter = 100 centimeters, so 2.5 meters = $2.5 * 100 = 250$ centimeters.

91. What is the value of $(-3) + (+7)$?

- a) -10
- b) -4
- c) 4
- d) 10

■ Answer: 4

■ Explanation: $-3 + 7 = 4$

92. What is the value of $(-5) * (-2)$?

- a) -10
- b) -7
- c) 7
- d) 10

■ Answer: 10

■ Explanation: A negative multiplied by a negative results in a positive. $-5 * -2 = 10$

93. What is the result of $10^2 - 5^2$?

- a) 5
- b) 25
- c) 75
- d) 100

■ Answer: 75

■ Explanation: $10^2 = 100$, $5^2 = 25$, $100 - 25 = 75$

94. What is the value of $4!$ (4 factorial)?

- a) 4
- b) 8
- c) 16
- d) 24

■ Answer: 24

■ Explanation: $4! = 4 * 3 * 2 * 1 = 24$

95. Solve for x : $x/5 = 10$

- a) 2
- b) 5
- c) 50
- d) 100

■ Answer: 50

■ Explanation: Multiply both sides by 5: $x = 50$

96. What is the diameter of a circle with a radius of 6cm?

- a) 3 cm
- b) 6 cm
- c) 12 cm
- d) 36 cm

■ Answer: 12 cm

■ Explanation: Diameter = $2 * \text{radius} = 2 * 6\text{cm} = 12\text{cm}$

97. What is the circumference of a circle with a radius of 5cm (use $\pi \approx 3.14$)?

- a) 15.7 cm
- b) 31.4 cm
- c) 78.5 cm

d) 157 cm

■ Answer: 31.4 cm

■ Explanation: Circumference = $2 * \pi * \text{radius} \approx 2 * 3.14 * 5\text{cm} = 31.4 \text{ cm}$

98. If you flip a fair coin, what is the probability of getting heads?

a) 0

b) 1/4

c) 1/2

d) 1

■ Answer: 1/2

■ Explanation: There are two equally likely outcomes (heads or tails), so the probability of heads is 1/2.

99. What is the mean of the numbers 2, 4, 6, 8?

a) 2

b) 4

c) 5

d) 6

■ Answer: 5

■ Explanation: $(2 + 4 + 6 + 8) / 4 = 5$

100. What is the median of the numbers 1, 3, 5, 7, 9?

a) 3

b) 5

c) 7

d) 9

■ Answer: 5

■ Explanation: The median is the middle number when the numbers are arranged in order.

101. What is the mode of the numbers 2, 2, 3, 4, 4, 4, 5?

a) 2

b) 3

c) 4

d) 5

■ Answer: 4

■ Explanation: The mode is the number that appears most frequently.

102. What is the range of the numbers 10, 12, 15, 18, 20?

a) 5

b) 10

c) 15

d) 20

■ Answer: 10

■ Explanation: Range = highest number - lowest number = $20 - 10 = 10$

103. If $a = 2$ and $b = 3$, what is the value of $2a + b$?

a) 4

b) 7

c) 8

d) 10

■ Answer: 7

■ Explanation: $2 * 2 + 3 = 7$

104. If $x = 4$, what is the value of $x^2 - 2x + 1$?

a) 1

b) 9

c) 16

d) 25

■ Answer: 9

■ Explanation: $4^2 - (2 * 4) + 1 = 16 - 8 + 1 = 9$

105. Solve for x : $2x + 4 = 10$

a) 3

b) 6

c) 8

d) 12

■ Answer: 3

■ Explanation: Subtract 4 from both sides: $2x = 6$. Then divide both sides by 2: $x = 3$.

106. What is $10 \times (-2)$?

a) -20

b) -12

c) 12

d) 20

■ Answer: -20

■ Explanation: A positive number multiplied by a negative number results in a negative number.

107. What is $-15 / 3$?

- a) -5
- b) -3
- c) 3
- d) 5

■ Answer: -5

■ Explanation: A negative number divided by a positive number results in a negative number.

108. What is the value of $2^2 + 3^2$?

- a) 13
- b) 25
- c) 36
- d) 625

■ Answer: 13

■ Explanation: $2^2 = 4$ and $3^2 = 9$. $4 + 9 = 13$

109. Simplify: $3x + 2x - x$

- a) $2x$
- b) $4x$
- c) $5x$
- d) $6x$

■ Answer: $4x$

■ Explanation: Combine like terms: $3x + 2x - x = 4x$

110. Solve for y: $y - 7 = 11$

- a) 4
- b) 7
- c) 11
- d) 18

■ Answer: 18

■ Explanation: Add 7 to both sides: $y = 18$

111. What is $1/2 \times 2/3$?

- a) $1/3$
- b) $2/3$
- c) 1
- d) $4/6$

■ Answer: $1/3$

■ Explanation: Multiply the numerators and the denominators: $(1 \times 2) / (2 \times 3) = 2/6 = 1/3$

112. What is $2/5 \div 1/10$?

- a) $1/25$
- b) $2/50$
- c) 4
- d) 5

■ Answer: 4

■ Explanation: Invert the second fraction and multiply: $(2/5) \times (10/1) = 20/5 = 4$

113. If a circle has a diameter of 14cm, what is its radius?

- a) 7cm
- b) 14cm
- c) 21cm
- d) 28cm

■ Answer: 7cm

■ Explanation: Radius is half of the diameter: $14\text{cm} / 2 = 7\text{cm}$

114. What is the area of a circle with a radius of 3cm (use $\pi = 3.14$)?

- a) 9.42cm^2
- b) 18.84cm^2
- c) 28.26cm^2
- d) 113.04cm^2

■ Answer: 28.26cm^2

■ Explanation: $\text{Area} = \pi r^2 = 3.14 * 3\text{cm} * 3\text{cm} = 28.26\text{cm}^2$

115. What is 10% expressed as a decimal?

- a) 0.01
- b) 0.1
- c) 1
- d) 10

■ Answer: 0.1

■ Explanation: $10\% = 10/100 = 0.1$

116. What is 0.5 expressed as a fraction?

- a) $1/4$
- b) $1/2$
- c) $3/4$
- d) 1

■ Answer: $1/2$

■ Explanation: $0.5 = 5/10 = 1/2$

117. What is 0.25 expressed as a percentage?

- a) 2.5%
- b) 10%
- c) 25%
- d) 50%

■ Answer: 25%

■ Explanation: $0.25 = 25/100 = 25\%$

118. If $x = 5$ and $y = 2$, what is the value of $3x + y$?

- a) 8
- b) 13
- c) 17
- d) 22

■ Answer: 17

■ Explanation: $3 * 5 + 2 = 15 + 2 = 17$

119. Simplify the fraction $12/18$

- a) $2/3$
- b) $3/4$
- c) $6/9$
- d) $1/2$

■ Answer: $2/3$

■ Explanation: Both 12 and 18 are divisible by 6. $12/6 = 2$ and $18/6 = 3$, so the simplified fraction is $2/3$.

120. Convert the fraction $3/5$ to a decimal.

- a) 0.3
- b) 0.5
- c) 0.6
- d) 0.75

■ Answer: 0.6

■ Explanation: 3 divided by 5 equals 0.6.

121. Convert 0.75 to a fraction.

- a) $3/4$
- b) $1/2$

c) $\frac{2}{3}$

d) $\frac{1}{4}$

■ Answer: $\frac{3}{4}$

■ Explanation: 0.75 is equivalent to $\frac{75}{100}$, which simplifies to $\frac{3}{4}$.

122. What is the value of $(-5) + (+10)$?

a) -15

b) -5

c) 5

d) 15

■ Answer: 5

■ Explanation: $-5 + 10 = 5$

123. What is the value of $(-3) * (-4)$?

a) -12

b) -7

c) 7

d) 12

■ Answer: 12

■ Explanation: A negative multiplied by a negative results in a positive. $-3 * -4 = 12$

124. Solve for x: $x - 7 = 12$

a) 5

b) 7

c) 19

d) -5

■ Answer: 19

■ Explanation: Add 7 to both sides: $x = 19$

125. Solve for x: $3x = 27$

a) 9

b) 10

c) 24

d) 81

■ Answer: 9

■ Explanation: Divide both sides by 3: $x = 9$

126. What is the value of $2^2 + 3^2$?

a) 13

- b) 25
- c) 36
- d) 625

■ Answer: 13

■ Explanation: $2^2 = 4$, $3^2 = 9$, $4 + 9 = 13$

127. What is the value of $4^3 - 2^3$?

- a) 56
- b) 64
- c) 52
- d) 28

■ Answer: 56

■ Explanation: $4^3 = 64$, $2^3 = 8$, $64 - 8 = 56$

128. What is the sum of the interior angles of a pentagon?

- a) 360°
- b) 540°
- c) 720°
- d) 900°

■ Answer: 540°

■ Explanation: Sum of interior angles = $(n-2) * 180^\circ$, where n is the number of sides. For a pentagon (5 sides): $(5-2) * 180^\circ = 540^\circ$

129. What is the mean of the numbers 5, 10, 15, and 20?

- a) 10
- b) 12.5
- c) 15
- d) 50

■ Answer: 12.5

■ Explanation: Mean = $(5 + 10 + 15 + 20) / 4 = 50 / 4 = 12.5$

130. What is the median of the numbers 2, 5, 8, 11, 14?

- a) 5
- b) 8
- c) 11
- d) 14

■ Answer: 8

■ Explanation: The median is the middle number when the numbers are arranged in order. The median is 8.

131. What is the mode of the numbers 3, 5, 5, 7, 9, 9, 9?

- a) 5
- b) 7
- c) 9
- d) 3

■ Answer: 9

■ Explanation: The mode is the number that appears most frequently. The mode is 9.

132. If $a = 2$ and $b = 3$, what is the value of $2a + 3b$?

- a) 13
- b) 12
- c) 11
- d) 10

■ Answer: 13

■ Explanation: $2a + 3b = 2(2) + 3(3) = 4 + 9 = 13$

133. What is the result of $\frac{1}{2} + \frac{1}{4}$?

- a) $\frac{1}{6}$
- b) $\frac{1}{3}$
- c) $\frac{2}{6}$
- d) $\frac{3}{4}$

■ Answer: $\frac{3}{4}$

■ Explanation: Find a common denominator (4): $\frac{2}{4} + \frac{1}{4} = \frac{3}{4}$

134. What is the result of $\frac{2}{3} - \frac{1}{6}$?

- a) $\frac{1}{6}$
- b) $\frac{1}{2}$
- c) $\frac{1}{3}$
- d) $\frac{5}{6}$

■ Answer: $\frac{1}{2}$

■ Explanation: Find a common denominator (6): $\frac{4}{6} - \frac{1}{6} = \frac{3}{6} = \frac{1}{2}$

135. What is the value of $(2 + 3) * 4$?

- a) 10
- b) 20
- c) 24
- d) 14

■ Answer: 20

■ Explanation: Following order of operations (PEMDAS/BODMAS), $2 + 3 = 5$, then $5 * 4 = 20$

136. What is the value of $10 - 2 * 3 + 1$?

- a) 7
- b) 11
- c) 15
- d) 25

■ Answer: 7

■ Explanation: Following order of operations, $2 * 3 = 6$, then $10 - 6 + 1 = 7$

137. What is the value of $25 / 5$?

- a) 2
- b) 5
- c) 10
- d) 125

■ Answer: 5

■ Explanation: 25 divided by 5 equals 5.

138. What is the area of a rectangle with length 5 and width 3?

- a) 8
- b) 10
- c) 15
- d) 25

■ Answer: 15

■ Explanation: Area of a rectangle = length * width = $5 * 3 = 15$.

139. What is the perimeter of a square with side length 4?

- a) 8
- b) 12
- c) 16
- d) 24

■ Answer: 16

■ Explanation: Perimeter of a square = $4 * \text{side length} = 4 * 4 = 16$.

140. What is 0.5 as a fraction?

- a) $1/2$
- b) $1/4$
- c) $2/3$

d) $\frac{3}{4}$

■ Answer: $\frac{1}{2}$

■ Explanation: 0.5 is equivalent to one-half.

141. What is $\frac{2}{5} + \frac{1}{5}$?

a) $\frac{1}{5}$

b) $\frac{2}{10}$

c) $\frac{3}{5}$

d) $\frac{3}{10}$

■ Answer: $\frac{3}{5}$

■ Explanation: Adding fractions with the same denominator: $\frac{2}{5} + \frac{1}{5} = \frac{3}{5}$

142. What is $\frac{1}{2} * \frac{2}{3}$?

a) $\frac{1}{3}$

b) $\frac{2}{6}$

c) $\frac{1}{6}$

d) $\frac{3}{4}$

■ Answer: $\frac{1}{3}$

■ Explanation: $(1*2)/(2*3) = \frac{2}{6} = \frac{1}{3}$

143. What is the value of $(-5) + 10$?

a) -15

b) -5

c) 5

d) 15

■ Answer: 5

■ Explanation: $-5 + 10 = 5$

144. What is the value of $12 - (-6)$?

a) 6

b) 18

c) -6

d) -18

■ Answer: 18

■ Explanation: Subtracting a negative is the same as adding a positive: $12 + 6 = 18$

145. What is 20% expressed as a decimal?

a) 0.02

b) 0.2

- c) 2
- d) 20

■ Answer: 0.2

■ Explanation: $20\% = 20/100 = 0.2$

146. What is 0.75 expressed as a fraction?

- a) $1/4$
- b) $1/2$
- c) $3/4$
- d) $3/2$

■ Answer: $3/4$

■ Explanation: $0.75 = 75/100 = 3/4$

147. If a triangle has angles of 40° and 60° , what is the measure of the third angle?

- a) 20°
- b) 80°
- c) 100°
- d) 180°

■ Answer: 80°

■ Explanation: The sum of angles in a triangle is 180° . $180^\circ - 40^\circ - 60^\circ = 80^\circ$

148. What is the diameter of a circle with a radius of 7cm?

- a) 3.5cm
- b) 7cm
- c) 14cm
- d) 21cm

■ Answer: 14cm

■ Explanation: Diameter = $2 * \text{radius} = 2 * 7\text{cm} = 14\text{cm}$

149. What is the circumference of a circle with a diameter of 10cm (use $\pi \approx 3.14$)?

- a) 15.7cm
- b) 31.4cm
- c) 62.8cm
- d) 100cm

■ Answer: 31.4cm

■ Explanation: Circumference = $\pi * \text{diameter} = 3.14 * 10\text{cm} = 31.4\text{cm}$

150. What is the area of a circle with a radius of 5cm (use $\pi \approx 3.14$)?

- a) 15.7cm^2

b) 31.4cm^2

c) 78.5cm^2

d) 157cm^2

■ Answer: 78.5cm^2

■ Explanation: $\text{Area} = \pi * \text{radius}^2 = 3.14 * 5^2 = 78.5\text{cm}^2$

151. What is $5^3 + 2^2$?

a) 129

b) 33

c) 29

d) 17

■ Answer: 129

■ Explanation: $5^3 = 125$, $2^2 = 4$, $125 + 4 = 129$

152. What is the average of 10, 15, and 20?

a) 10

b) 15

c) 20

d) 45

■ Answer: 15

■ Explanation: $(10 + 15 + 20) / 3 = 15$

153. If a car travels 100km in 2 hours, what is its average speed?

a) 20km/h

b) 50km/h

c) 100km/h

d) 200km/h

■ Answer: 50km/h

■ Explanation: $\text{Speed} = \text{distance} / \text{time} = 100\text{km} / 2\text{h} = 50\text{km/h}$

154. Solve for x: $x^2 = 25$

a) -5

b) 5

c) ± 5

d) 12.5

■ Answer: ± 5

■ Explanation: Both 5 and -5 squared equal 25.

155. What is the value of 10^0 ?

- a) 0
- b) 1
- c) 10
- d) undefined

■ Answer: 1

■ Explanation: Any number raised to the power of 0 is 1.

156. What is the next prime number after 17?

- a) 18
- b) 19
- c) 20
- d) 21

■ Answer: 19

■ Explanation: A prime number is only divisible by 1 and itself.

157. If the ratio of boys to girls in a class is 2:3 and there are 10 boys, how many girls are there?

- a) 5
- b) 10
- c) 15
- d) 20

■ Answer: 15

■ Explanation: Let x be the common ratio. $2x = 10$, so $x = 5$. Number of girls = $3x = 3 * 5 = 15$.

158. Simplify the expression: $3x + 2x - x$

- a) $2x$
- b) $4x$
- c) $5x$
- d) $6x$

■ Answer: $4x$

■ Explanation: Combine like terms: $3x + 2x - x = 4x$.

159. Solve for y : $y - 7 = 12$

- a) 5
- b) 7
- c) 19
- d) 84

■ Answer: 19

■ Explanation: Add 7 to both sides: $y = 19$.

160. What is the value of $(-3)^2$?

- a) -9
- b) 9
- c) -6
- d) 6

■ Answer: 9

■ Explanation: $(-3)^2 = (-3) * (-3) = 9$.

161. Convert $\frac{3}{5}$ to a percentage.

- a) 35%
- b) 50%
- c) 60%
- d) 75%

■ Answer: 60%

■ Explanation: $\frac{3}{5} = 0.6 = 60\%$.

162. If a train travels at 60 km/h for 2 hours, how far does it travel?

- a) 30 km
- b) 60 km
- c) 120 km
- d) 240 km

■ Answer: 120 km

■ Explanation: Distance = speed * time = 60 km/h * 2 h = 120 km.

163. Solve for a: $5a - 10 = 25$

- a) 3
- b) 5
- c) 7
- d) 10

■ Answer: 7

■ Explanation: Add 10 to both sides: $5a = 35$. Then divide by 5: $a = 7$.

164. What is the value of 2.5×4 ?

- a) 6
- b) 8
- c) 10
- d) 12

■ Answer: 10

■ Explanation: $2.5 \times 4 = 10$.

165. What is the value of $12.5 / 2.5$?

- a) 2.5
- b) 5
- c) 7.5
- d) 10

■ Answer: 5

■ Explanation: $12.5 / 2.5 = 5$.

166. If $x = 4$ and $y = 2$, what is the value of $3x + 2y$?

- a) 16
- b) 18
- c) 20
- d) 22

■ Answer: 16

■ Explanation: $3(4) + 2(2) = 12 + 4 = 16$.

167. What is the value of $(4 + 2) \times (6 - 2)$?

- a) 16
- b) 24
- c) 32
- d) 48

■ Answer: 24

■ Explanation: $(4 + 2) \times (6 - 2) = 6 \times 4 = 24$.

168. What is 75% expressed as a decimal?

- a) 0.075
- b) 0.75
- c) 7.5
- d) 75

■ Answer: 0.75

■ Explanation: $75\% = 75/100 = 0.75$.

169. If you have 12 apples and you eat $1/3$ of them, how many apples are left?

- a) 4
- b) 6
- c) 8
- d) 9

■ Answer: 8

■ Explanation: $\frac{1}{3}$ of 12 is 4. $12 - 4 = 8$ apples left.

170. What is the simple interest earned on \$1000 at 5% interest per year for 2 years?

- a) \$50
- b) \$100
- c) \$500
- d) \$1000

■ Answer: \$100

■ Explanation: Simple interest = Principal x Rate x Time = $\$1000 \times 0.05 \times 2 = \100 .

171. What is 15 divided by $\frac{3}{5}$?

- a) 1
- b) 9
- c) 25
- d) 75

■ Answer: 25

■ Explanation: $15 \div \left(\frac{3}{5}\right) = 25$

172. Solve for y: $y - 7 = 15$

- a) 8
- b) 22
- c) -8
- d) -22

■ Answer: 22

■ Explanation: Add 7 to both sides: $y = 22$

173. What is the next number in the sequence: 2, 5, 8, 11, ...?

- a) 12
- b) 13
- c) 14
- d) 15

■ Answer: 14

■ Explanation: This is an arithmetic sequence with a common difference of 3. $11 + 3 = 14$

174. If a car travels 120km in 2 hours, what is its average speed?

- a) 30km/h
- b) 60km/h

c) 120km/h

d) 240km/h

■ Answer: 60km/h

■ Explanation: Speed = Distance / Time = 120km / 2 hours = 60km/h

175. Solve for z: $3z - 6 = 15$

a) 3

b) 7

c) 9

d) 21

■ Answer: 7

■ Explanation: Add 6 to both sides: $3z = 21$. Then divide both sides by 3: $z = 7$

176. What is the area of a triangle with base 10cm and height 6cm?

a) 16cm^2

b) 30cm^2

c) 60cm^2

d) 120cm^2

■ Answer: 30cm^2

■ Explanation: Area of a triangle = $(1/2) * \text{base} * \text{height} = (1/2) * 10\text{cm} * 6\text{cm} = 30\text{cm}^2$

177. Simplify: $2(x + 3) - x$

a) $x + 3$

b) $x + 6$

c) $3x + 3$

d) $3x + 6$

■ Answer: $x + 6$

■ Explanation: $2(x + 3) - x = 2x + 6 - x = x + 6$

178. If you have 12 apples and eat 5, how many apples are left?

a) 5

b) 7

c) 17

d) 60

■ Answer: 7

■ Explanation: $12 - 5 = 7$

179. What is the result of $15 + 7 \times 2 - 4$?

a) 21

- b) 25
- c) 29
- d) 30

■ Answer: 25

■ Explanation: Following the order of operations (PEMDAS/BODMAS), multiplication comes before addition and subtraction. $7 \times 2 = 14$. Then, $15 + 14 - 4 = 25$.

180. Simplify the fraction 12/18.

- a) $\frac{2}{3}$
- b) $\frac{3}{4}$
- c) $\frac{6}{9}$
- d) $\frac{1}{2}$

■ Answer: $\frac{2}{3}$

■ Explanation: Both 12 and 18 are divisible by 6. $12 \div 6 = 2$ and $18 \div 6 = 3$, resulting in the simplified fraction $\frac{2}{3}$.

181. What is the percentage equivalent of $\frac{3}{5}$?

- a) 30%
- b) 40%
- c) 50%
- d) 60%

■ Answer: 60%

■ Explanation: To convert a fraction to a percentage, divide the numerator by the denominator and multiply by 100. $(3 \div 5) \times 100 = 60\%$.

182. What is the perimeter of a square with sides of 6m?

- a) 12m
- b) 24m
- c) 36m
- d) 6m

■ Answer: 24m

■ Explanation: The perimeter of a square is the sum of all its sides: $6\text{m} \times 4 = 24\text{m}$.

183. What is $10 - (-3)$?

- a) 7
- b) -7
- c) 13
- d) -13

■ Answer: 13

■ Explanation: Subtracting a negative number is the same as adding its positive counterpart: $10 + 3 = 13$

184. What is the value of π (approximately)?

- a) 2.718
- b) 3.142
- c) 1.618
- d) 2.5

■ Answer: 3.142

■ Explanation: π (pi) is approximately 3.142

185. If $a = 5$ and $b = 2$, what is $a^2 - b^2$?

- a) 21
- b) 10
- c) 29
- d) 3

■ Answer: 21

■ Explanation: $5^2 - 2^2 = 25 - 4 = 21$

186. Convert 0.75 to a percentage

- a) 7.5%
- b) 75%
- c) 750%
- d) 0.75%

■ Answer: 75%

■ Explanation: $0.75 \times 100\% = 75\%$

187. What is the value of $2^3 + 4^2$?

- a) 10
- b) 20
- c) 24
- d) 30

■ Answer: 20

■ Explanation: 2^3 (2 cubed) is $2 \times 2 \times 2 = 8$. 4^2 (4 squared) is $4 \times 4 = 16$. $8 + 16 = 20$.

188. What is the perimeter of a square with sides of 7m?

- a) 14m
- b) 21m
- c) 28m

d) 49m

■ Answer: 28m

■ Explanation: The perimeter of a square is 4 times the length of one side: $4 \times 7\text{m} = 28\text{m}$.

189. What is the average of 10, 15, 20, and 25?

a) 15

b) 17.5

c) 20

d) 22.5

■ Answer: 17.5

■ Explanation: Add the numbers together ($10 + 15 + 20 + 25 = 70$) and divide by the number of values (4): $70 \div 4 = 17.5$

190. What is 15% of 200?

a) 15

b) 30

c) 150

d) 300

■ Answer: 30

■ Explanation: To find 15% of 200, multiply 200 by 0.15 (15% as a decimal): $200 \times 0.15 = 30$.

191. If a train travels at 60 km/h for 3 hours, how far does it travel?

a) 20km

b) 60km

c) 120km

d) 180km

■ Answer: 180km

■ Explanation: Distance = Speed \times Time. $60\text{ km/h} \times 3\text{ hours} = 180\text{km}$.

192. What is the value of 5! (5 factorial)?

a) 5

b) 10

c) 60

d) 120

■ Answer: 120

■ Explanation: 5! means $5 \times 4 \times 3 \times 2 \times 1 = 120$

193. What is the result of $(2 + 3) * 4$?

- a) 10
- b) 20
- c) 24
- d) 14

■ Answer: 20

■ Explanation: Following the order of operations (PEMDAS/BODMAS), we first calculate the parentheses: $2 + 3 = 5$. Then, we multiply by 4: $5 * 4 = 20$.

194. If $x + 7 = 12$, what is the value of x ?

- a) 5
- b) 19
- c) -5
- d) 7

■ Answer: 5

■ Explanation: Subtract 7 from both sides of the equation: $x = 12 - 7 = 5$.

195. What is the area of a rectangle with length 8 cm and width 5 cm?

- a) 13 cm^2
- b) 40 cm^2
- c) 26 cm^2
- d) 60 cm^2

■ Answer: 40 cm^2

■ Explanation: The area of a rectangle is calculated by multiplying its length and width: $\text{Area} = \text{length} * \text{width} = 8 \text{ cm} * 5 \text{ cm} = 40 \text{ cm}^2$.

196. Solve for y : $2y - 6 = 10$

- a) 8
- b) 7
- c) -2
- d) 2

■ Answer: 8

■ Explanation: Add 6 to both sides: $2y = 16$. Then divide both sides by 2: $y = 8$.

197. What is the value of x in the equation $3x + 7 = 16$?

- a) 3
- b) 6
- c) 9
- d) 11

■ Answer: 3

■ Explanation: Subtract 7 from both sides of the equation: $3x = 9$. Then divide both sides by 3: $x = 3$.

198. If a rectangle has a length of 12 cm and a width of 5 cm, what is its area?

- a) 17 cm^2
- b) 60 cm^2
- c) 24 cm^2
- d) 70 cm^2

■ Answer: 60 cm^2

■ Explanation: The area of a rectangle is calculated by multiplying its length and width:
 $\text{Area} = \text{length} \times \text{width} = 12 \text{ cm} \times 5 \text{ cm} = 60 \text{ cm}^2$.

199. What is the result of $(2^3 + 4) \div 2$?

- a) 4
- b) 6
- c) 10
- d) 12

■ Answer: 6

■ Explanation: First, calculate 2^3 which is $2 * 2 * 2 = 8$. Then add 4: $8 + 4 = 12$. Finally, divide by 2: $12 \div 2 = 6$.

200. Simplify the expression: $5x + 2y - 3x + 4y$

- a) $2x + 6y$
- b) $8x + 6y$
- c) $2x - 2y$
- d) $8x - 2y$

■ Answer: $2x + 6y$

■ Explanation: Combine like terms: $(5x - 3x) + (2y + 4y) = 2x + 6y$