

HOLIDAY HOMEWORK 2014-15
CLASS IX /MATH

Name : _____

Solve the questions (in a separate notebook)

1. $(-2 - \sqrt{3})(-2 + \sqrt{3})$ when simplified is: (a)
positive and irrational
(b) positive and rational
(c) negative and irrational
(d) negative and rational

2. Two rational numbers between $\frac{1}{2}$ and $\frac{5}{3}$ are:
(a) $\frac{1}{6}$ and $\frac{2}{6}$ (b) $\frac{1}{2}$ and $\frac{2}{1}$
(c) $\frac{5}{6}$ and $\frac{7}{6}$ (d) $\frac{2}{3}$ and $\frac{4}{3}$

3. The sum of the digits of a number is subtracted from the number, the resulting number is always divisible by:
(a) 2 (b) 5
(c) 8 (d) 9

4. $(6 + \sqrt{27}) - (3 + \sqrt{3}) + (1 - 2\sqrt{3})$ when simplified is:

- (a) positive and irrational
(b) negative and rational
(c) positive and rational
(d) negative and irrational
5. Two rational numbers between $\frac{1}{5}$ and $\frac{4}{5}$ are:
(a) 1 and $\frac{3}{5}$ (b) $\frac{2}{5}$ and $\frac{3}{5}$
(c) $\frac{1}{2}$ and $\frac{2}{1}$ (d) $\frac{3}{5}$ and $\frac{6}{5}$
6. Add $5\sqrt{2} + 3\sqrt{3}$ and $2 - 5\sqrt{3}$.
(a) $7\sqrt{2} - 2\sqrt{3}$ (b) $6\sqrt{2} - 3\sqrt{3}$
(c) $6\sqrt{2} - 8\sqrt{3}$ (d) $6\sqrt{2} + 8\sqrt{3}$
7. A number is an irrational if and only if its decimal representation is:
(a) non-terminating
(b) non-terminating and repeating
(c) non-terminating and non-repeating
(d) terminating
8. The value of $\sqrt[4]{(64)^{-2}}$ is:
(a) $\frac{1}{8}$ (b) $\frac{1}{2}$
(c) 8 (d) $\frac{1}{64}$
9. $(5 + \sqrt{5})(5 - \sqrt{5})$ on simplification gives:

(a) 20

(b) $2\sqrt{5}$

(c) 10

(d) 25

10. $\sqrt[3]{\frac{54}{250}}$ is:

(a) $\frac{9}{25}$

(b) $\frac{3}{5}$

(c) $\frac{27}{125}$

(d) $\sqrt[3]{\frac{2}{5}}$

11. The value of $7^{\frac{1}{2}} 8^{\frac{1}{2}}$ is :

(a) $28^{\frac{1}{2}}$

(b) $56^{\frac{1}{2}}$

(c) $14^{\frac{1}{2}}$

(d) $42^{\frac{1}{2}}$

12. The value of $\sqrt[4]{\sqrt[3]{2^2}}$ equal to :

(a) $2^{-1/6}$

(b) 2^{-6}

(c) $2^{1/6}$

(d) 2^6

13. When $15\sqrt{15}$ is divided by $3\sqrt{3}$ the quotient is:

(a) $5\sqrt{3}$

(b) $5\sqrt{5}$

(c) $5\sqrt{5}$

(d) $3\sqrt{3}$

14. Which of the following number is irrational?

(a) $\sqrt{16}$

(b) $(3 - \sqrt{3})(3 + \sqrt{3})$

(c) $\sqrt{5} + 3$

(d) $-\sqrt{25}$

15. The value of $\frac{2^o + 7^o}{5^o}$ is:

(a) 2

(b) 0

(c) $\frac{9}{5}$

(d) $\frac{1}{5}$

16. $(5 + \sqrt{8}) + (3 - \sqrt{2}) - (\sqrt{2} - 6)$ when simplified is:

(a) positive and irrational

(b) negative and irrational

(c) positive and rational

(d) negative and rational

17. An irrational number between $\frac{5}{7}$ and $\frac{7}{9}$ is:

(a) 0.75

(b) $\sqrt{6}$

(c) 0.750750075000...

(d) 0.7512

18. Simplified value of $(25)^{\frac{1}{3}} \times (5)^{\frac{1}{3}}$ is:

(a) 25

(b) 3

(c) 1

(d) 5

19. Which of the following is an irrational number?

(a) 2.2

(b) π

(c) 3.763

(d) 3.763

20. Which of the following is an irrational number?

(a) $\sqrt{23}$

(b) $\sqrt{225}$

(c) 0.3796

(d) 7.478

21. Which of the following is the value of $(\sqrt{11} - \sqrt{7})(\sqrt{11} + \sqrt{7})$

(a) -4

(b) 4

(c) $\sqrt{11}$

(d) $\sqrt{7}$

22. Which of the following is a rational number?

(a) $1 + \sqrt{3}$

(b) π

(c) $2\sqrt{3}$

(d) 0

23. Simplified value of $(16)^{\frac{-1}{4}} \times \sqrt[4]{16}$ is:

- (a) 16 (b) 4
(c) 1 (d) 0

24. Value of $\sqrt{(3^{-2})}$ is:

- (a) $\frac{1}{9}$ (b) 9
(c) -3 (d) $\frac{1}{3}$

25. Zero of the polynomial $p(x)$ where $p(x) = ax$, $a \neq 0$ is:

- (a) 1 (b) a
(c) 0 (d) $\frac{1}{a}$

26. If $\sqrt{3} = 1.732$ and $\sqrt{2} = 1.414$, the value of $\frac{1}{\sqrt{3} - \sqrt{2}}$ is:

- (a) 0.318 (b) 3.146
(c) $\frac{1}{3.146}$ (d) $\sqrt{1.732} - \sqrt{1.414}$

27. Which one of the following is an irrational number?

- (a) 0.14 (b) 0.1416
(c) 0.1416 (d) 0.4014001400014.....

28. π is:

- (a) a rational number (b) an integer
(c) an irrational number (d) a whole number

29. The decimal form of $\frac{56}{100}$ is:

- (a) 0.56 (b) 0.056
(c) 0.0056 (d) 5.6

30. The decimal expansion of $\sqrt{2}$ is:

- (a) finite decimal
(b) 1.4121
(c) non-terminating recurring
(d) non-terminating non-recurring

31. Simplify: $\frac{13^{\frac{1}{5}}}{13^{\frac{1}{3}}}$

- (a) $13^{\frac{2}{15}}$ (b) $13^{\frac{8}{15}}$
(c) $13^{\frac{1}{3}}$ (d) $13^{-\frac{2}{15}}$

32. $\frac{p}{q}$ form of the number 0.3 is:

- (a) $\frac{3}{10}$ (b) $\frac{3}{100}$
(c) $\frac{1}{3}$ (d) $\frac{1}{2}$

33. The simplest rationalization factor of $\sqrt{50}$ is:
- (a) $5\sqrt{2}$ (b) $\sqrt{2}$
(c) 50 (d) $\sqrt{50}$
34. The value of $(125)^{-\frac{1}{3}}$ is
- (a) 25 (b) $\frac{1}{5}$
(c) 5 (d) $\frac{1}{25}$
35. The product of Quotient of a non-zero rational number with an irrational number is:
- (a) Irrational number (b) Rational number
(c) Whole number (d) Natural number
36. The value of $\sqrt{20} \times \sqrt{5}$ is
- (a) 10 (b) $2\sqrt{5}$
(c) $20\sqrt{5}$ (d) $4\sqrt{5}$
37. Which of the following is irrational number?
- (a) 0.15 (b) 0.1516
(c) 0.1516 (d) 0.501500150001---
38. If $x = 2 + \sqrt{3}$, then $\left(x + \frac{1}{x}\right)$ equals to:

- (a) $-2\sqrt{3}$ (b) 2
(c) 4 (d) $4 - 2\sqrt{3}$
39. A rational number lying between $\sqrt{2}$ and $\sqrt{3}$ is:
(a) $\frac{\sqrt{2} + \sqrt{3}}{2}$ (b) $\sqrt{6}$
(c) 1.6 (d) -1
40. The value of $\sqrt[3]{216} - \sqrt[3]{125}$ is:
(a) 1 (b) 0
(c) 2 (d) -1
41. Which of the following is a rational number?
(a) $\sqrt{5}$ (b) π
(c) 0.101001000100001..... (d) 0.853853853.....
42. A rational number between -3 and 3 is
(a) 0 (b) -4.3
(c) -3.4 (d) 1.101100110001....
43. Which of the following is an irrational number?
(a) 3.3 (b) 3.763
(c) 3.763 (d) 3.101100110001.....

44. The factors of $(2a - b)^3 + (b - 2c)^3 + 8(c - a)^3$ is: (a) $(2a - b)(b - 2c)(c - a)$
 (b) $3(2a - b)(b - 2c)(c - a)$
 (c) $6(2a - b)(b - 2c)(c - a)$
 (d) $2a \times b \times 2c$
45. In which of the following $(x + 2)$ is a factor?
 (a) $4^3 - 13x + 6$ (b) $x^3 + x^2 + x + 4$
 (c) $4^3 + 13x - 25$ (d) $-2x^3 + x^2 - x - 19$
46. Which of the following is a binomial in y ? (a) $2y + 3y$ (b) $2y + 1$
 (c) $\sqrt{y} + \sqrt{2y}$ (d) $y\sqrt{y} + 1$
47. Which of the following polynomials has -3 as a zero?
 (a) $(x - 3)$ (b) $x^2 - 9$
 (c) $x^2 - 3x$ (d) $x^2 + 3$
48. Which of the following is a polynomial in x ?
 (a) $x + \frac{1}{x}$ (b) $x^2 + \sqrt{x}$
 (c) $x + \sqrt{2}x^2 + 1$ (d) $\sqrt{3x} + 1$

49. The remainder when $x^2 + 2x + 1$ is divided by $(x + 1)$ is

- (a) 4 (b) 0
(c) 1 (d) -2

50. Which of the following is a trinomial in x ?

- (a) $x^3 + 1$ (b) $x^3 + x^2 + x$
(c) $x\sqrt{x} + \sqrt{x} + 1$ (d) $x^3 + 2x$

51. The value of the polynomial $x^2 - x - 1$ at $x = -1$ is:

- (a) -3 (b) 1
(c) -1 (d) 0

52. If $P(x) = 7 - 3x + 2x^2$ then value of $P(-2)$ is :

- (a) 12 (b) 31
(c) 21 (d) 22

53. The coefficient of x^2 in $(3x + x^3)(x + \frac{1}{x})$ is:

- (a) 3 (b) 1
(c) 4 (d) 2

54. What is remainder when $x^3 - 2x^2 + x + 1$ is divided by $(x - 1)$?

- (a) 0 (b) -1
(c) 1 (d) 2

55. Degree of which of the following polynomial is zero?

(a) x

(b) 15

(c) y

(d) $x + \frac{1}{x}$

56. When $p(x)$ is divided by $ax - b$ then the remainder is: (a) p

(a) $+ b$

(b) $p(-b/a)$

(c) $p(a/b)$

(d) $p(b/a)$

57. If $x^2 + kx + 6 = (x + 2)(x + 3)$ for all x , the value of k is: (a) 1

(b) -1

(c) 5

(d) 3

58. Zero of the zero polynomial is:

(a) 0

(b) 1

(c) any real number

(d) not defined

59. Which of the following is cubic polynomial (a) $x^3 +$

$3x^2 - 4x + 3$

(b) $x^2 + 4x - 7$ (c) $3x^2 + 4$

(d) $3(x^2 + x + 1)$

60. If $x^{51} + 51$ is divided by $(x + 1)$ the remainder is: (a) 0

(b) 1

(c) 49

(d) 50