

WORKSHEET
Class IX

Name :

Date:9.9.13

Q1 Classify the following as rational or irrational

a) $2\sqrt{5}$

b) $3\sqrt{23} - 23$

c) $(2\sqrt{7}) / (\sqrt{7} - 7)$

d) $1/\sqrt{2}$

e) $2\sqrt{\pi}$

Q2 Simplify each of the following

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

b) $(3 + \sqrt{2})(2 + \sqrt{2})$

c) $(\sqrt{5} + \sqrt{2})^2$

Q3. Rationalise the following

a) $1/\sqrt{7}$

b) $1/(\sqrt{7} - \sqrt{6})$

c) $7\sqrt{3}/(\sqrt{10} + \sqrt{3})$

d) $5/(4\sqrt{3} - 3\sqrt{2})$

Q4. If $x = 9 - 4\sqrt{5}$, find the value of $x - 1/x$

Q5. If $x = 3 + \sqrt{8}$, find the value of $x^2 + 1/x^2$

Q6. Find the value of a and b if $(3 - \sqrt{5}) / (3 + 2\sqrt{5}) = a + 5 - b$

Q7. Simplify $(32)^{1/5} \times (125)^{-1/3}$

Q8. Find three rational numbers between -1 and 4.

Q9. Find the value of $(729)^{-1/6}$

Q10. Factorise $2y^3 + y^2 - 2y - 1$

Q11. Use suitable identity to evaluate $(103)^3$

Q12. Factorise: $a^6 - b^6$

Q13. If $x = 3 - 2\sqrt{2}$, find $x^3 - 1/(x^3)$.

Q14. Simplify and factorise $(a+b+c)^2 - (a-b-c)^2 + 4b^2 - 4c^2$

Q15. If $a+b+c=6$ and $ab+bc+ca=11$, find the value of $a^3+b^3+c^3-3abc$.

Q16. The polynomials bx^3+3x^2-3 and $2x^3-5x+b$, when divided by $(x-4)$ leaves the remainder R_1 and R_2 respectively. Find the value of b , if $2R_1 - R_2 = 0$.

Q17. Plot the points $A(-2,-2)$, $B(6,0)$, $C(0,4)$ and $D(-3,2)$ on the graph paper. Draw figure $ABCD$ and in which quadrant A and D lie.

Q18. If two parallel lines are intersected by a transversal, then prove that bisectors of the interior angles form a rectangle.