



INDIAN SCHOOL MUSCAT
SENIOR SECTION
DEPARTMENT OF MATHEMATICS
CLASS IX
WORKSHEET NO. - 1
NUMBER SYSTEMS



SECTION A: (1 MARK)

1.	Convert $\frac{3}{11}$ into decimal form and mention the type of decimal expansion	[0 .2727... Non terminating decimal]
2.	Simplify: $\frac{28}{\sqrt{28} - \sqrt{7}}$	[$4\sqrt{7}$]
3.	Simplify: $16^{-\frac{1}{4}} \times \sqrt[4]{16}$	[1]
4.	Simplify: $\frac{\sqrt{32} + \sqrt{48}}{\sqrt{8} + \sqrt{12}}$ (NCERT EXEMPLAR QN.)	[2]
	Express each of the following in decimal form: a) $\frac{23}{1000}$ b) $\frac{7}{6}$	

SECTION B: (2 MARKS)

5.	If $x = 3 + 2\sqrt{2}$, then find whether $x + \frac{1}{x}$ is rational or irrational (CCE 2011)	[Rational]
6.	Simplify: $\left(\frac{125^{\frac{1}{2}}}{275^{\frac{1}{5}}}\right)^{\frac{5}{2}}$	$\left(\frac{2}{3}\right)$
7.	Express 1.4191919... in the form of p/q, where p and q are integers and $q \neq 0$.	$\frac{281}{198}$
8.	Find the product: $\sqrt[3]{2} \times \sqrt[4]{2} \times \sqrt[12]{32}$ (NCERT EXEMPLAR QN.)	[2]
9.	Insert a rational number and an irrational number between 0.17 and 0.18	

SECTION C: (3 MARKS)

10.	If $x = \frac{3+\sqrt{5}}{2}$, find the value of $x^2 + \frac{1}{x^2}$ (HOTS)	[7]
11.	Simplify : $3\sqrt{45} - \sqrt{125} + \sqrt{200} - \sqrt{50}$ (CCE 2011)	$4\sqrt{5} + 5\sqrt{2}$
12.	Represent $\sqrt{8.5}$ on the number line.	
13.	Classify the following numbers as rational or irrational with justification: (a) $\sqrt{10} \times \sqrt{15}$ (b) $0.14\overline{16}$ (c) $-\sqrt{0.4}$ (d) $0.401400140001...$	a , b , f - rational c , d , e - irrational

	(e) $\sqrt{\frac{9}{27}}$ (f) $(1 + \sqrt{5}) - (4 + \sqrt{5})$	
14.	Write $\sqrt[3]{4}$, $\sqrt{3}$, $\sqrt[4]{6}$ in ascending order. (CCE2013)	$\sqrt[4]{6}$, $\sqrt[3]{4}$, $\sqrt{3}$
15.	Locate $\sqrt{3}$ on the number line (CCE2010)	
16.	Visualize on the number line 2.463.	

SECTION D: (4 MARKS)

17.	Simplify: $\frac{1}{3-\sqrt{8}} - \frac{1}{\sqrt{8}-\sqrt{7}} + \frac{1}{\sqrt{7}-\sqrt{6}} - \frac{1}{\sqrt{6}-\sqrt{5}} + \frac{1}{\sqrt{5}-2}$ (HOTS)	[5]
18.	Find the value of p and q if $\frac{7+\sqrt{5}}{7-\sqrt{5}} - \frac{7-\sqrt{5}}{7+\sqrt{5}} = p - 7\sqrt{5}q$. (HOTS)	P=0, q = -1/11
19.	If $x = \frac{\sqrt{a+1} + \sqrt{a-1}}{\sqrt{a+1} - \sqrt{a-1}}$, then show that $x^2 - 2ax + 1 = 0$ (CCE2014)	
20.	If $x = \frac{\sqrt{3}-\sqrt{2}}{\sqrt{3}+\sqrt{2}}$ and $y = \frac{\sqrt{3}+\sqrt{2}}{\sqrt{3}-\sqrt{2}}$, find the value of $x^2 + y^2 + xy$. (CCE2011)	[99]