



# INDIAN SCHOOL AL WADI AL KABIR

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Department of Mathematics, 2020-2021

CLASS: XII

**Revision Worksheet** – Unit Test - 1

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## OBJECTIVE TYPE (1 Mark)

Q.1.	$\tan^{-1}\left(\frac{1}{2}\right) + \tan^{-1}\left(\frac{1}{3}\right) =$							
A	$\frac{\pi}{8}$	B	$\frac{\pi}{4}$	C	$\frac{3\pi}{4}$	D	$\frac{\pi}{6}$	
Q.2.	$\cos^{-1}\frac{4}{5} + \cos^{-1}\frac{12}{13} = \cos^{-1}x$ , then $x =$ is							
A	$\frac{33}{65}$	B	$\frac{65}{33}$	C	$\frac{36}{65}$	D	$\frac{11}{12}$	
Q.3.	$\tan^{-1}\left(\frac{1}{3}\right) + \tan^{-1}\left(\frac{1}{5}\right) + \tan^{-1}\left(\frac{1}{7}\right) + \tan^{-1}\left(\frac{1}{8}\right) =$							
A	$\frac{7\pi}{4}$	B	1	C	$\frac{3\pi}{4}$	D	$\frac{\pi}{4}$	
Q.4.	$\tan^{-1}(2) + \tan^{-1}(3) =$							
A	$\frac{7\pi}{4}$	B	$\pi$	C	$\frac{3\pi}{4}$	D	$\frac{\pi}{4}$	
Q.5.	$\tan^{-1}(x) + \tan^{-1}(y) = \frac{\pi}{4}$ , then $x + y + xy =$							
A	$\frac{1}{\sqrt{3}}$	B	$\frac{1}{\sqrt{2}}$	C	$\sqrt{3}$	D	1	
Q.6.	If $\tan^{-1}(x) + \tan^{-1}(y) + \tan^{-1}(z) = \pi$ , then $x + y + z - xyz =$							
A	1	B	-1	C	0	D	$x^2y^2z^2$	
Q.7.	$\tan^{-1}\left(\frac{\cos x - \sin x}{\cos x + \sin x}\right) =$							
A	x	B	$\frac{\pi}{4} + x$	C	$\frac{\pi}{4} - x$	D	$\frac{\pi}{2} + x$	
Q.8.	If $\alpha = \sin^{-1}\frac{7}{25}$ , $\beta = \cos^{-1}\frac{3}{5}$ , then $\sin(\alpha + \beta) =$							
A	$\frac{117}{125}$	B	$\frac{24}{25}$	C	$\frac{21}{125}$	D	$\frac{441}{125}$	
Q.9.	If $\cos^{-1}\left(\frac{x^2-1}{x^2+1}\right) + \tan^{-1}\left(\frac{2x}{x^2-1}\right) = \frac{2\pi}{3}$ , then $x =$							
A	$2 + \frac{1}{\sqrt{3}}$	B	$2 - \sqrt{3}$	C	$2 + \sqrt{3}$	D	$\sqrt{3} - 1$	
Q.10.	If $\tan^{-1}\left(\frac{\sqrt{1+x^2} - \sqrt{1-x^2}}{\sqrt{1+x^2} + \sqrt{1-x^2}}\right) =$							
A	$\frac{\pi}{4} + \frac{1}{2}\cos^{-1}x^2$	B	$\frac{\pi}{4} - \frac{1}{2}\cos^{-1}x^2$	C	$\frac{1}{2}\cos^{-1}x^2$	D	$\frac{\pi}{2} - \frac{1}{2}\cos^{-1}x^2$	

<b>Q11</b>	If $f(x) = x + 7$ and $g(x) = x - 7$ , then $f(g(7)) =$							
	<b>A</b>	0	<b>B</b>	-7	<b>C</b>	7	<b>D</b>	14
<b>Q.12</b>	Let R be a relation in the set N of all-natural numbers given by $R = \{(x, y) : x = y - 2, y > 6\}$ , then choose the correct answer							
	<b>A</b>	$(6, 8) \in R$		$(2, 4) \in R$		$(3, 8) \in R$		$(1, 7) \in R$
<b>Q.13</b>	The relation R in $N \times N$ such that $(a, b)R(c, d) \Leftrightarrow a + d = b + c$ is							
	<b>A</b>	reflexive only	<b>B</b>	symmetric only	<b>C</b>	transitive and reflexive	<b>D</b>	an equivalence relation
<b>Q.14</b>	Let $f: R \text{ to } R : f(x) = \sqrt[3]{3 - x^3}$ , then $f \circ f(x) =$							
	<b>A</b>	$\sqrt[3]{3 - x^3}$	<b>B</b>	$x^{\frac{1}{3}} - 3$	<b>C</b>	x	<b>D</b>	$(3 + x)^3$
<b>Q.15</b>	Let $f: N \text{ to } S : f(x) = 9x^2 + 6x - 5$ , where S is the range of f, then $f^{-1}(43) =$							
	<b>A</b>	2	<b>B</b>	$2, -\frac{8}{3}$	<b>C</b>	$-2, \frac{8}{3}$	<b>D</b>	-3, -2
<b>Q.16</b>	Let $f: N \text{ to } S : f(x) = 9x^2 + 6x - 5$ , where S is the range of f, then $f^{-1}(x) =$							
	<b>A</b>	$\frac{\sqrt{x-6}+1}{3}$	<b>B</b>	$\frac{\sqrt{x+6}+1}{3}$	<b>C</b>	$\frac{\sqrt{x-6}-1}{3}$	<b>D</b>	$\frac{\sqrt{x+6}-1}{3}$
<b>Q.17</b>	The relation R on the set $N \times N$ defined by $(a, b)R(c, d) \Leftrightarrow ad = bc$ , for all $(a, b), (c, d) \in N \times N$ is							
	<b>A</b>	reflexive and symmetric but not transitive	<b>B</b>	an equivalence relation	<b>C</b>	symmetric and transitive but not reflexive	<b>D</b>	reflexive and transitive but not symmetric
<b>Q.18</b>	If $f(x) = \frac{2x+1}{x-1}, x \neq 1$ , then							
	<b>A</b>	$f^{-1}(3) < f^{-1}(1)$	<b>B</b>	$f^{-1}(3) > f^{-1}(1)$	<b>C</b>	$f^{-1}(3) = f^{-1}(1)$	<b>D</b>	$f^{-1}(3)$ does not exist
<b>Q.19</b>	If $f(x) = 7x + 8, g(x) = 9x - 6$ , then $(f \circ g)^{-1}(x) =$							
	<b>A</b>	$\frac{63}{x+34}$	<b>B</b>	$\frac{1}{63(x+34)}$	<b>C</b>	$\frac{x+34}{63}$	<b>D</b>	$\frac{x+63}{34}$
<b>Q.20</b>	Let $f(x) = \frac{x^2+3}{x^2+4x-32}$ , then vertical asymptote(s) of the graph of f							
	<b>A</b>	$x = 4, x = -8$	<b>B</b>	$x = \pm\sqrt{3}$	<b>C</b>	$x = -4, x = 8$	<b>D</b>	$x = 2, x = 4$

<b>Answers</b>	1	B	2	A	3.	D	4	C
	5	D	6	C	7	C	8	A
	9	B	10	B	11	C	12	A
	13	D	14	C	15	A	16	D
	17	B	18	B	19	C	20	A