WS 2
MT 103(E)

THIRUVANANTHAPURAM EDUCATIONAL DISTRICT

MATHEMATICS WORKSHEET 2021-22 STANDARD X

MATHEMATICS OF CHANCE AND SECOND DEGREE EQUATIONS

ANSWER KEY

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1) a)10/15

b)5/15

2) $x(x+2)+1= 121$

$x^2+2x+1=121$

$(x+1)^2=121$

$x+1=11$ or $x+1 =-11$

$x=10$ or $x=-12$

Numbers are 10 and 12 or -12 and -10

3) a) $(x-3)^2 =100$

$x-3 =10$ or $x-3 = -10$

$x=13$ or $x= -7$

Since 'x' represent the side of a square, x=13 cm

b) Perimeter= 52 cm

4) a) $25\times15/40\times35= 15/56$

b) $15 \times 20/40 \times 35 = 3/14$

c) Probability of atleast one girl = 1- Probability of getting none of them boys = 1-3/14= 11/14

5) a) $x(x+6) = 40$

$x^2+6x-40 = 0$

b) $x^2+6x+9 = 49$

$(x+3)^2 = 7^2$

$x+3 = 7$ or $x+3 = -7$

$x = 4$ or $x = -10$

breadth= 4 , length =10

6) a)90

b)16,25,36,49,64,81

6 numbers

c) 84/90=42/45

7) a) $n^2+8n = 240$

$n^2+8n+16 = 256$

$(n+4)^2=16^2$

$n+4 = 16$ or $n+4 = -16$

$n=12$ or $n=-20$

Number of terms = 12

8)) a)x^2

b)$\pi(x\sqrt{2}/2)^2 = \pi x^2/2$

c)$x^2 / \pi x^2/2 = 2 / \pi$

9) a)2

b)$2n+3$

c)$2n^2/2+n(5-1)=140$

$n^2+4n=140$

$n^2+4n+4=144$

$(n+2)^2=12^2$

$n+2=12$ or $n+2=-12$

$n=10$ or $n=-14$

Since 'n' represent number of terms, $n=10$

10) $x(x+8)=105$

$x^2+8x=105$

a)16

b)$x^2+8x+16=121$

$(x+4)^2=11^2$

$x+4=11$ or $x+4=-11$

$x=7$ or $x=-15$

Numbers are 7,15