

91. (A)

$$\frac{a}{b}$$

$$\frac{a-1}{b} = \frac{1}{3} \Rightarrow 3a - 3 = b \Rightarrow 3a - b = 3$$

$$\frac{a}{b+8} = \frac{1}{4} \dots\dots(1)$$

$$4a = b + 8 \Rightarrow 4a - b = 8 \dots\dots(2)$$

From equation (i) & (ii)

$$-a = -5$$

$$a = 5$$

Put a = 5 in equation (1)

$$3(5) - b = 3$$

$$15 - 3 = b$$

$$b = 12$$

$$\text{So, } \frac{a}{b} = \frac{5}{12}$$

92. 12, 15, 18,99

$$t_n = a + (n-1) d$$

$$99 = 12 + (n-1) 3$$

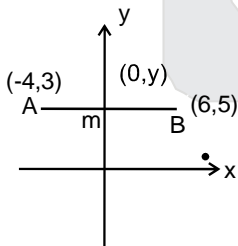
$$= 12 + 3n - 3$$

$$99 = 9 + 3n$$

$$90 = 3n$$

$$n = 30.$$

93. (B)



$$\text{So } AM = MN$$

$$AM^2 = MN^2$$

$$(0 + 4)^2 + (y - 3)^2 = (6 - 0)^2 + (5 - y)^2$$

$$-6y + 10y = 36 + 25 - 16 - 9$$

$$4y = 36$$

$$y = 9$$

$$\text{So, } (x, y)$$

$$(0, 9)$$

94. (C)

Sec A (1 - sinA) (secA + tanA)

$$\frac{1}{\cos A} (1 - \sin A) \left(\frac{1}{\cos A} + \frac{\sin A}{\cos A} \right)$$

$$\frac{1}{\cos A} (1 - \sin A) \left(\frac{1 + \sin A}{\cos A} \right)$$

$$\frac{1 - \sin^2 A}{\cos^2 A} = \left(\frac{\cos^2 A}{\cos^2 A} \right) = 1.$$

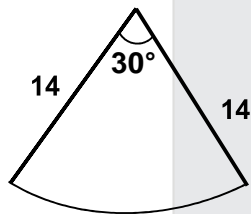
95. (A)

$$r = 12$$

Mint hand cover 6° in 1 mint

So in 5 mint it will cover

$$(6 \times 5)^\circ = 30^\circ$$



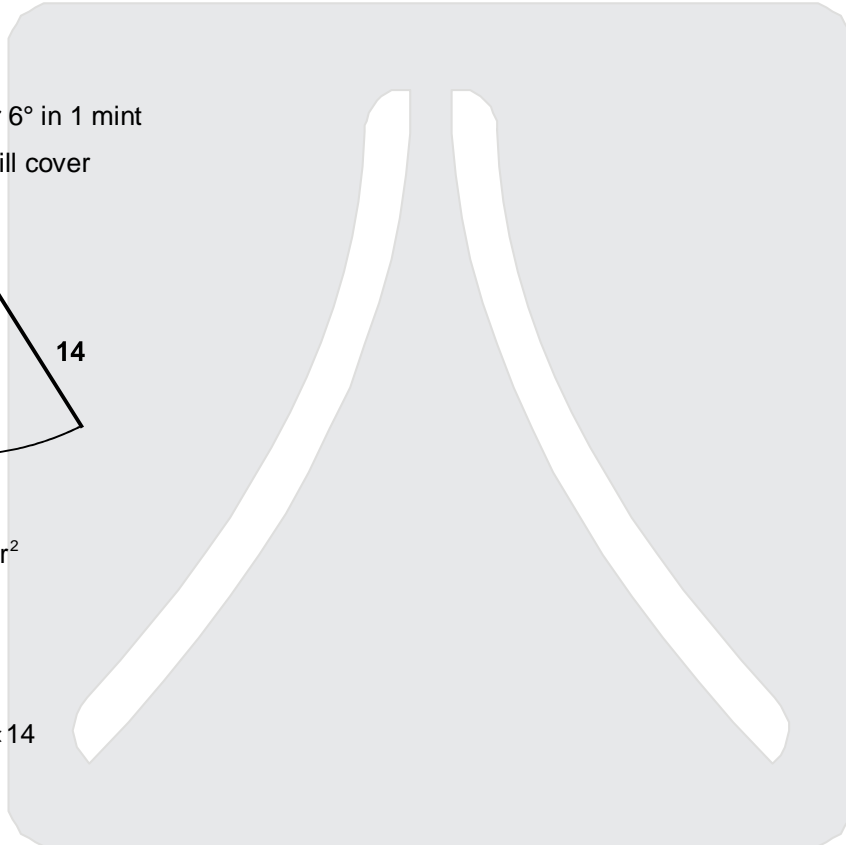
$$\text{Area} = \frac{\theta}{360} \pi r^2$$

$$= \frac{30}{360} \pi (14)^2$$

$$= \frac{1}{12} \frac{\pi 2}{7} \times 14 \times 14$$

$$6_3$$

$$\text{Area} = \frac{154}{3}.$$



96. (B)

$$\frac{(n+1)}{2}$$

97. (C)

3 blue, 2 white & 4 Red

$$\text{Probability} = \frac{2}{9}$$

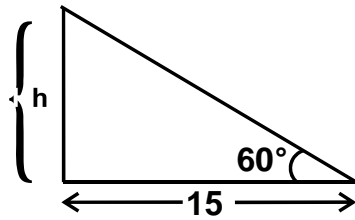
98. (D)

99. (C)

$$\tan 60^\circ = \frac{h}{15}$$

$$\sqrt{3} = \frac{h}{15}$$

$$h = 15\sqrt{3}$$



100. (A)

$$A_n = 3 + 2n$$

$$a_1 = 5$$

$$a_2 = 7$$

$$\text{So } a = 5$$

$$d = 2$$

$$S_{24} = \frac{24}{2} [2a + (24 - 1)d]$$

$$= 12 [2 \times 5 + 23 \times 2]$$

$$= 12 [10 + 46]$$

$$S_{24} = 672.$$

