1(D) centre $(x_0, y_0) = (0, 0)$

radius $c = 9$

We know eqn of circle with centre and radius is

$$(x - x_0)^2 + (y - y_0)^2 = c^2$$

$$x^2 + y^2 = 81$$

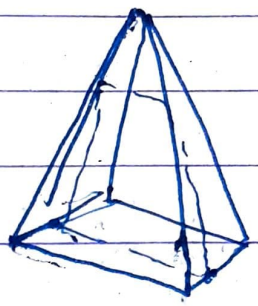
2(C) $(x - 7)^2 + (y + 5)^2 = 36$

$$(x - x_0)^2 + (y - y_0)^2 = c^2$$

$$(x_0, y_0) = (7, -5)$$

3.) (C)

4.) (D)



5 (B) $2\angle 1 = 20^\circ$

$\angle 1 = 10^\circ$

6 (C) The number of horses n for year y is varying as

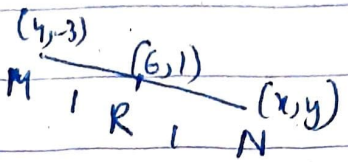
$$n = (y \times y) + 2$$

hence for $y = 6$

$$n = 36 + 2 = 38$$

7) M (4, -3) R (6, 1)

(D)



$6 = \frac{4+x}{2}$, $1 = \frac{-3+y}{2}$

$x = 8$ $y = 5$

N (8, 5)

8 Let sides be a and b

(C)

$\frac{6a^2}{4b^2} = \frac{25}{64} \Rightarrow \frac{a}{b} = \frac{5}{8}$

~~New vol ratio :~~

The ratio of volume is $\frac{a^3}{b^3} = \left(\frac{5}{8}\right)^3 = \frac{1000}{V}$

$V = 4096 in^3$

9 (D) Surface area $SA = 2((3\times11)+(11\times9)+(3\times9))$

$= 318 in^2$

10 (B) $r = 5m$ $h = 6m$

$V = \frac{1}{3}\pi r^2 h = 157.08 m^3$

11. Vol. of box $= 1.5\times5\times1.7 = 12.75 cm^3 = V_{box}$

(C) Vol. of candies $V_c = 1 cm^3$

number of candies $= \frac{12.75}{1} = 12$

12 (A) circle

13) (A) angle $= 72^\circ = 72 \times \frac{\pi}{180}$

$= \frac{2\pi}{5}$ rad

radius $r = 5$ cm

$\frac{2\pi}{5} = \frac{JK}{5}$

$JK = 2\pi$ cm

14) (B) Area of shaded region is

$r = 6$ in

$A = \pi(6)^2 \times \left(\frac{360-60}{360}\right)$

$= \pi \times 36 \times \frac{300}{360} = 30\pi$ in^2

15) (C) $m\angle SRT = 2$

16) $m\angle SRT = 2m\angle SRT$

(D) $\therefore = 132^\circ$

17) (C) $C = \pi d$

$\frac{C}{d} = \pi$

18) (A)

19) (A) centre of circle is $(-3, 1)$

radius $= 4$

$(x+3)^2+(y-1)^2=16$

20) (D)

21)

22) (B) $A = 8\pi \text{ in}^2$

$A = \frac{1}{8}\pi r^2 = 8\pi$

$r = 8 \text{ in}$

23) (B) $AB = XY$ (both chords are at equal distance from centre)

$XY = 3 \times 2 = 6$

24) (D)

25) (B)

26) (A)

27) (A)

28) (B) Area of whole region is $= 8 \times 10 = 80 \text{ unit}^2$

Area of unshaded regions

$= \left(\frac{1}{2} \times 3 \times 3\right) 2 + \left(\frac{1}{2} \times 3 \times 3\right) \times 2 + \left(\frac{1}{2} \times 2 \times 1\right)$

$+ (3 \times 2) + 3 \times (4 \times 2)$

$= 33 \text{ unit}^2$

Area of shaded region is $= 80 - 33 = 47 \text{ unit}^2$

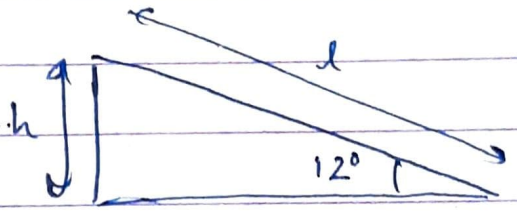
$= 47 \text{ unit}^2$

29) (A) $y = 5x + 9$

$m = 5$

30) (D) $\sin(12) = \frac{h}{l}$

$l = 721.4 \text{ ft}$



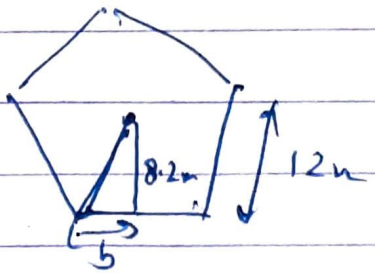
31) (B)

32) (B) $b = 6 \text{ m}$

Area of triangle is

$= \frac{1}{2} \times 8.2 \times 6$

$= 24.6 \text{ m}^2$



Area of pentagon $= 24.6 \times 10 = 246 \text{ m}^2$

33) (C)

34) (A)

35) (D)