9 c)

$$\frac{A(\Delta ABC)}{A(\Delta XYZ)} = \frac{(1)^2}{(4)^2} = \frac{1}{16}$$

10 a

$$\theta^{rad} = \frac{L}{r} = \frac{4}{5}$$

$$\theta^{\circ} = \theta^{rad} \times \frac{180^{\circ}}{\pi} = \frac{4}{5} \times \frac{180^{\circ}}{\pi} = \boxed{45^{\circ}\ 50'}$$

11 $\cos(270^{\circ} - \theta) = \frac{-1}{2}$ a)

$$-\sin\theta = -\frac{1}{2}$$

$$\sin\theta = \frac{1}{2}$$

$\theta = 30^{\circ}$ or $\theta = 150^{\circ}$

smallest

12 d)

Let $AE = EN = NC = x$

In ΔEDC

$\because \overline{ED} \parallel \overline{NO}$

$\therefore \frac{NO}{ED} = \frac{CN}{CE}$

$\therefore \frac{2}{ED} = \frac{1\cancel{x}}{2\cancel{x}}$

$ED = \boxed{4}$ cm

In ΔABC

$\because \overline{ED} \parallel \overline{BC}$

$\therefore \frac{ED}{BC} = \frac{AE}{AC}$

$\frac{4}{BC} = \frac{1\cancel{x}}{3\cancel{x}}$

$\therefore BC = \boxed{12}$ cm

Good Luck

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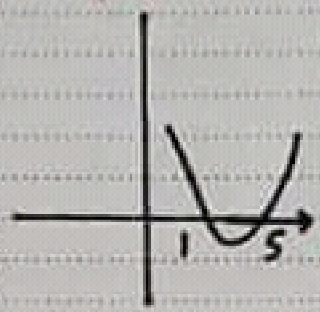
Model answer of the experimental exam (1^{st} sec.)

1 d)

S.S of the eq. $ax^2+bx+c=0$



is $\{1,5\}$

$\therefore 2ax^2+2bx+2c=0$

$2(ax^2+bx+c)=0$ $\div 2$

$\therefore ax^2+bx+c=0$

$\therefore S.S=\{5,1\}$

2 a)

let 1^{st} root $= L$

2^{nd} roo $= \frac{1}{L}$

Prod. $= \frac{c}{a}$

$(L)(\frac{1}{L}) = \frac{k^2+2k}{3}$

$1 = \frac{k^2+2k}{3}$

$k^2+2k = 3$

$k^2+2k-3=0$

$(k-1)(k+3)=0$

$\boxed{k=1}$ $\boxed{k=-3}$

3 b)

The Correct:

The ratio between their perimeters $= \boxed{1:2}$

4 b)

Circ. $= 2\pi r$

$(2)(8\pi) = 2\pi r$

$\boxed{r=8}$ cm

Another Sol.

$L = r\,\theta^{rad}$

$8\pi = r(\pi)$

$\boxed{r=8}$ cm

5 $a = 2i^2 - 5i^3$

$= -2+5i$

$b = \frac{2}{i^3} + 5i^2$

$= 2i - 5$

$a-b = -2+5i-2i+5$

$= 3+3i$

$= 3(1+i)$ #

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6 Let $EM = MD = x$

$\because \overline{CB} \cap \overline{ED} = \{M\}$

$\therefore CM \cdot MB = x \cdot x$

$(1)(4) = x^2$

$\boxed{x = 2}$

$(AB)^2 = (AE)(AD)$

$= (2x)(4x)$

$= 8x^2$

$= 8(2)^2$

$= 32$

$\because P_N(A) = (AB)^2$

$\therefore P_N(A) = \boxed{32}$

7 $L + M = \frac{-b}{a} = 7$

$LM = \frac{c}{a} = 1$

$\because L^2 + M^2 = (L+M)^2 - 2LM$

$\therefore (\sqrt{L})^2 + (\sqrt{M})^2 = (\sqrt{L} + \sqrt{M})^2 - 2\sqrt{L}\sqrt{M}$

$\therefore (\sqrt{L} + \sqrt{M})^2 = L + M + 2\sqrt{LM}$

$= 7 + 2\sqrt{1}$

$= 9$

→

$\therefore \sqrt{L} + \sqrt{M} = \pm 3$

$\therefore \boxed{\text{Sum} = \pm 3}$

$\text{Prod.} = \sqrt{L}\sqrt{M}$

$= \sqrt{LM}$

$= \sqrt{1} = \boxed{1}$

$\boxed{\text{Prod.} = \boxed{1}}$

$x^2 - \text{Sum}\, x + \text{Prod.} = 0$

$x^2 - (\pm 3)x + 1 = 0$

$x^2 + 3x + 1 = 0$

or $x^2 - 3x + 1 = 0$

8 Let $AC = CD = x$

$P_M(A) = (AB)^2$

$200 = (AB)^2$

$\because (AB)^2 = (AC)(AD)$

$\therefore 200 = x(2x)$

$200 = 2x^2$

$x^2 = 100$

$\therefore x = 10$ cm

$\therefore AD = 2(10) = \boxed{20}$ cm

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Released Items in Mathematics for first form secondary

(1) If the curve of the function $f : f(x) = ax^2 + bx + c$ intersects the $x - axis$ at the two points $(5, 0), (1, 0)$, then the solution set of the equation : $2ax^2 + 2bx + 2c = 0$ is ....

(a) $\{10, 2\}$ (b) $\{5, 0\}$ (c) $\{1, 0\}$ (d) $\{5, 1\}$

(2) If one of the roots of the equation : $3x^2 - (k + 2)x + k^2 + 2k = 0$ is the multiplicative inverse of the other , then K = ...

(a) -3 , 1 (b) -3 , -1 (c) 3 , -1 (d) 3 , 1

(3) If the ratio between the lengths of two corresponding sides in two similar polygons equals 1 : 2 ,then which of the following statements is incorrect ?

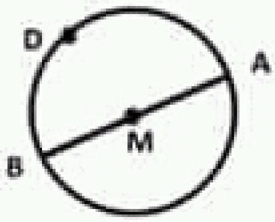
(a) The ratio between their areas equals 1 : 4

(b) The ratio between their perimeters equals 1 : 4

(c) The ratio between the measures of their corresponding angles equals 1 : 1

(d) The ratio of similarity equals 1 : 2

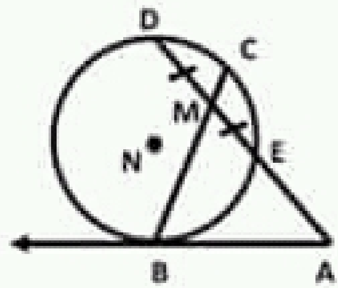
(4) In the opposite figure :
$\overline{AB}$ is the diameter of the circle M , If the length of the arc $\widehat{ADB}$ = 8π cm , then the radius length of its circle M equals .... cm



(a) 16 (b) 8 (c) 4 (d) 2

(5) If $a = 2i^2 - 5i^3$, $b = \frac{2}{i^3} + 5i^2$, Prove that : $a - b = 3(1 + i)$

(6) In the opposite figure :
$\overrightarrow{AB}$ touches the circle N at B , $AE = ED$, M is the midpoint of $\overline{DE}$, CM = 1 cm , MB = 4 cm
Find $P_N(A)$



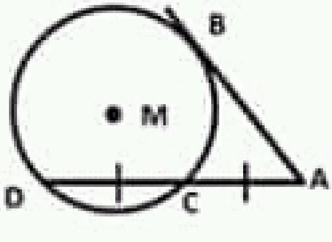
(7) If L and M are the roots of the equation: $x^2 - 7x + 1 = 0$, form the quadratic equation whose roots are $\sqrt{L}$ and $\sqrt{M}$

(8) <u>In the opposite figure :</u>

C is the midpoint of $\overline{DA}$, $\overline{AB}$ touches the circle M at B

, $P_M(A) = 200$

Find the length of $\overline{AD}$



(9) If $\Delta ABC \sim \Delta XYZ$, the perimeter of ΔABC : the perimeter of $\Delta XYZ = 1:4$, then the area of ΔABC : the area of ΔXYZ = ...

(a) 1 : 2 (b) 2 : 8 (c) 1 : 16 (d) 1 : 64

(10) The degree measure of the central angle which subtends an arc of length 4 cm and the radius of its circle equals 5 cm equals ....

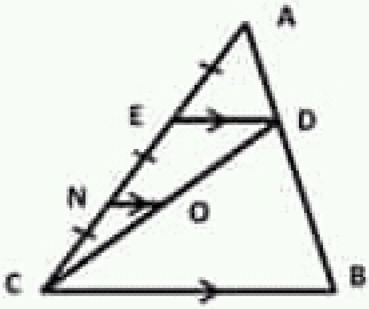
(a) $45^\circ 50'$ (b) $55^\circ 50'$ (c) 144° (d) 72°

(11) If $\cos(270^\circ - \theta) = \frac{-1}{2}$ such that θ is the measure of the smallest positive angle, then θ = ...°

(a) 30 (b) 150 (c) 210 (d) 330

(12) <u>In the opposite figure :</u>

$\overline{DE} \parallel \overline{ON} \parallel \overline{BC}$, ON = 2 cm ,then the length of $\overline{BC}$ = ... cm



(a) 8 (b) 9 (c) 10 (d) 12