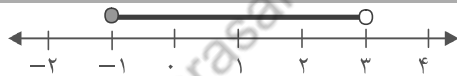
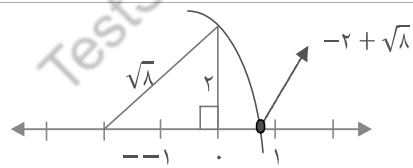


$\frac{5}{4}, \frac{2}{3}, \frac{18}{45} = \frac{2}{5}, \frac{7}{3}$ <p>مختوم متناوب مختوم متناوب</p>	الف) B	1
$\left[\underbrace{(Q \cap Q')}_{\emptyset} \cup Z \right] - (R \cup N) = Z - R = \emptyset$	گزینه ب) B	2
$\frac{3}{4/5} = \frac{4}{x-3} = \frac{6}{y+3} \rightarrow \begin{cases} \frac{1}{1/5} = \frac{4}{x-3} \rightarrow x-3=6 \rightarrow x=9 \\ \frac{1}{1/5} = \frac{6}{y+3} \rightarrow y+3=9 \rightarrow y=6 \end{cases} \rightarrow x+y=15$	گزینه د) C	
$\sqrt[3]{(4-2\sqrt{2})(4+2\sqrt{2})} = \sqrt[3]{16-8} = \sqrt[3]{8} = 2$	گزینه د) D	
$x = \{0, 1, 2, 3\} \rightarrow B = \{0, 5, 10, 15\}$	الف) $n(B) = 4$	3
$(A - B) \cup (B - A) = \emptyset \cup \{0\} = \{0\}$	ب) $\frac{n(n-1)}{2} = \frac{4 \times 3}{2} = 6$	
$(A \cup B) \cap (B - B) = B \cap \emptyset = \emptyset$		
$A = \left\{ 3x + 2 \mid \underbrace{x \in W, x \leq 2}_{x=0,1,2} \right\} = \{2, 5, 8\}$		4
$B = \{1, 5, 25, 125, \dots, 25^{20}\} = \{\delta^x \mid x \in W, x \leq 40\} \text{ یا } \{\delta^x \mid x \in Z, 0 \leq x \leq 40\}$ <p style="text-align: center;"> $\delta^0 \quad \delta^1 \quad \delta^2 \quad \delta^3 \quad \delta^4$ </p>		
$\text{حالات مطلوب} = \{(1, 1), (2, 2), (3, 3), (4, 4), (5, 5), (6, 6)\}$	الف) $P = \frac{6}{36} = \frac{1}{6}$	5
$\frac{1}{36} \times \frac{1}{36} \times \frac{1}{5} = \frac{1}{36} \times \frac{1}{36} \times \frac{1}{5} = \frac{1}{720}$	الف) $\frac{36-3}{90} = \frac{33}{90} = \frac{11}{30}$	6
$\left(\frac{1}{25} - \frac{1}{5} \right) \times 5^2 = \frac{-4}{25} \times 25 = -4$	ب) $\frac{4}{3} \times \frac{-3}{1} = -4$	



(الف) ۷

$$\sqrt{\lambda} = \sqrt{2^2 + 2^2}$$



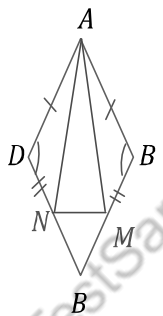
(ب)

اگر $r = \frac{1}{\pi} \rightarrow$ محیط دایره $= 2\pi r = 2\pi \times \frac{1}{\pi} = 2 \in \mathbb{Q}$

✓ (A) (ج)

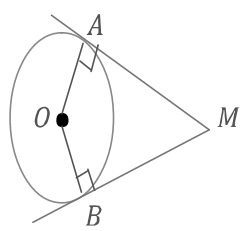
اگر $r = \frac{1}{\sqrt{\pi}} \rightarrow$ مساحت دایره $= \pi r^2 = \pi \times \left(\frac{1}{\sqrt{\pi}}\right)^2 = \pi \times \frac{1}{\pi} = 1 \in \mathbb{Q}$

✗ (B)



$$\left. \begin{array}{l} AD = AN \\ \hat{B} = \hat{D} \\ BM = DM \end{array} \right\} \text{ض ز ض} \rightarrow \Delta ABM \cong \Delta ADN \rightarrow AM = AN$$

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$$\left. \begin{array}{l} \hat{A} = \hat{B} = 90^\circ \\ OA = OB = r \\ OM = OM \text{ وتر مشترک} \end{array} \right\} \text{وتر و ضلع} \rightarrow \Delta OAM \cong \Delta OBN \rightarrow AM = MB$$

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(ب) اضلاع متناظرشان متناسب باشند.

$$2x - 30 = 50 \rightarrow 2x = 80 \rightarrow x = \frac{80}{2} = 40$$

(الف) ۱۰

$$0.45 \times \frac{10^{-7}}{(10^2)^{-7} = 10^{-14}} \times \frac{(0/1)^{-15}}{(10^{-1})^{-15} = 10^{15}} = 4/5 \times 10^{-6} \times 10^{-14} \times 10^{15} = 4/5 \times 10^{-5}$$

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(الف) $\underbrace{|4 - \sqrt{17}|}_{-} + \underbrace{|5 - \sqrt{17}|}_{+} = \sqrt{17} - 4 + 5 - \sqrt{17} = 1$

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(ب) $3\sqrt[3]{2^3} \times 3 - 2\sqrt[3]{3^3} \times 3 + 3\sqrt[3]{3} = 6\sqrt[3]{3} - 9\sqrt[3]{3} + 3\sqrt[3]{3} = 0$

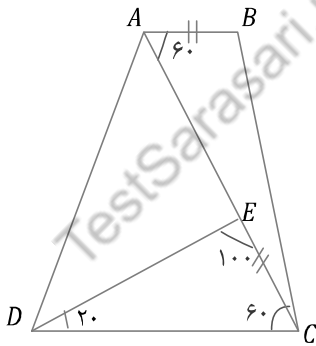
$$ج) \frac{\sqrt[3]{4 \times (-6) \times 9}}{\sqrt[5]{6^2 \times (-6)^2}} = \frac{-\sqrt[3]{2^2 \times 3^3}}{-\sqrt[5]{6^5}} = \frac{-6}{-6} = 1$$

$$-\frac{1}{3} \left| 4 - 4 \overbrace{(-2)^{-2}}^{\frac{1}{4}} \right| + \left| \overbrace{(-2)^2}^4 - 2 + 9 \right| = -\frac{1}{3} \left| 4 - 4 \times \frac{1}{4} \right| + |-8 - 2 + 9| =$$

$$-\frac{1}{3} |3| + |-1| = -1 + 1 = 0$$

$$\underbrace{\left((\sqrt{2}^{-1}) \right)^{-2}}_{(\sqrt{2})^2 = \sqrt{4}}, \underbrace{(-5^{-1})^{-2}}_{(-\frac{1}{5})^{-2} = 5^2 = 25}, \underbrace{\sqrt[2]{\sqrt{2}^{12}}}_{\sqrt[2]{2^6} = 2^3 = 8}, 4^{-20} \rightarrow 4^{-20} < \sqrt{4} < 4 < 25$$

۱۳



$$(AB \parallel CD, \text{مورب } AC) \rightarrow \hat{A}_1 = \hat{C}_1 = 60^\circ *$$

$$\left. \begin{array}{l} AB = CE \text{ فرض} \\ \hat{A}_1 = \hat{C}_1 = 60^\circ * \\ AC = DC \text{ فرض} \end{array} \right\} \rightarrow \Delta ABC \cong \Delta COE \xrightarrow{\text{ض ز ض}} \hat{E} = \hat{B} = 100^\circ$$

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