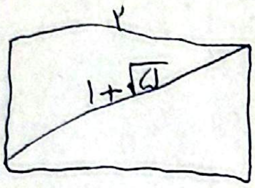
آیین اسلامی — یازدهم ... A — شماره ۱۸

۱-

$\frac{\text{طول}}{\text{عرض}} \to \frac{1+\sqrt{5}}{2} = \frac{1+\sqrt{5}}{2}\times 4 = 2+2\sqrt{5}$ $\quad \frac{4\times 2 * 2\sqrt{5}}{4\times 5} = \frac{2+2\sqrt{5}}{5} = \frac{2}{5}+\frac{2\sqrt{5}}{5}$

۲-



$(1+\sqrt{5})^2 = 2^2 + x^2 \to 1+5+2\sqrt{5} = 4+x^2 \to x = \sqrt{2+2\sqrt{5}}$

↓ مجذور:

$\frac{1}{2}+\frac{\sqrt{5}}{2} = \frac{2+2\sqrt{5}}{4}$

۳-

$\sqrt{2a^2+4a} = 3a-2 \to 2a^2+4a = 9a^2+4-12a \to 7a^2-16a+4=0$

$\Delta: 16\times 16 - 7\times 16 = 9\times 16$ $\quad \frac{16\pm\sqrt{9\times 16}}{14}$ ۲ و $\frac{2}{7}$

۲ ق ق غ

$\frac{2}{7}$ ق ق

$\frac{\frac{2}{7}+1}{\frac{2}{7}} = \frac{9}{2} = 4/5$

۴-

$\frac{3\sqrt{x+1} - \sqrt{x^2-1} - \sqrt{x^2-1} - 3\sqrt{x+1}}{9-x+1} = \frac{-2\sqrt{x^2-1}}{-x+10} = \frac{x-1}{\sqrt{x-1}} \to \frac{-2\sqrt{x^2-1}}{-x+10} = \sqrt{x-1}$

$\frac{4x^2-4}{x^2-20x+100} = x-1 \to x^3-20x^2+100x-x^2+20x-100 = x^3-21x^2+120x-100-4x^2+4 =$ $\quad 1\pm\sqrt{33}$

$x^3-25x^2+120x-96=0$

۵-

$\frac{x-\sqrt{2-x}-\sqrt{2-x}-x}{4-2+x} = \frac{-2\sqrt{2-x}}{2+x} = \frac{2-x}{5\sqrt{2-x}} \to 4-x^2 = -10\sqrt{2-x}$

$16+x^4-8x^2 = +200-100x$

$x^2-10\sqrt{2-x}$ $\quad 1\pm\sqrt{15}$ → $1+\sqrt{15}$ غ ق ق ، → $1-\sqrt{15}$ ق ق $\quad x^4-8x^2+100x-184$

اجواب منفی وارد و جواب + ندارد.

۶-

$\frac{x^2-2x+1+x^2}{x^4-2x^3+x^2} = \frac{160}{9} \to 160x^4-320x^3+160x^2 = 18x^2-18x+9$

$160x^4-320x^3+142x^2+18x-9=0$ $\quad S = \frac{-b}{a} = \frac{320}{160} = 2$

۷-

$\sqrt{-x^3+4x^2+25x-100} \to$ بازه → حدوداً $[4,5]$

$\sqrt{-x^2+6x-8} \to x^2-6x+8 \leq 0 \quad [2,4]$

$\cap = \{4\} \to -64+64+100-100=0$ اجتماع

$\sqrt{4+\sqrt{0}} = 2$

$-16+24-8=0 \quad \sqrt{16+\sqrt{0}} = 4 \quad 4+2 = 4+2$ ✓ → جواب ۴

۸ -

$-\frac{x+17}{3} = |x+2|+|x-1|$

$x>1$: $2x+1 = -\frac{x+17}{3} \to 6x+3 = -x+17 \to 7x = 14 \to x = 2$ (۲,۵)

$-2<x<1$: $x+2-x+1 = 3$

$x<-2$: $-x-2-x+1 = -2x-1 = -\frac{x+17}{3} \to -6x-3 = -x+17 \Rightarrow 5x = -20$ (-۴,۷)

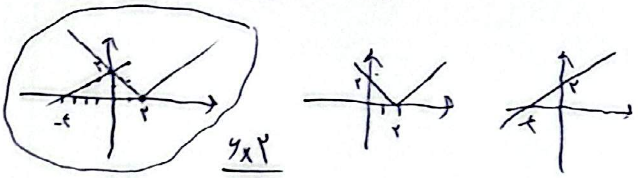
$x = -4$

$\sqrt{36+4} = 2\sqrt{10}$

---

۹ -

$\frac{1}{2}x+2$ $|x-2|$



$\frac{6\times 2}{2}$

۲ : ارتفاع

۶ : قاعده

مساحت محصور $= \frac{6\times 2}{2} = 6$

---

۱۰ -

$\frac{1}{x} + \frac{1}{x+9} = \frac{1}{20} \to \frac{2x+9}{x^2+9x} = \frac{1}{20} \to 40x+180 = x^2+9x$

$x^2-31x+180=0$

$(x-36)(x+5)=0$ → $x=36$ ✓ ، $x=-5$ غ ق

$\frac{1}{36}+\frac{1}{45} = \frac{45\times 36}{81} = 20$

(۳۶), ۴۵

بروز