

حسن رضا یی / تالیف ۹ / دوازدہم دفتر B

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Elegance

6

$$\frac{1}{152} \rightarrow -\frac{1}{x}(1) + b + -\frac{1}{x}(x) + b + \dots + -\frac{1}{x} + b$$

$$-\frac{(1+x+b+\dots+bx)}{x} + b \times 9$$

$$\frac{9 \times b}{x} \text{ zed } \rightarrow 9b - 18 = 18$$

7

$$f(x) = \sqrt{ax^2 + bx + c}$$

$$[1, +\infty) \rightarrow f(x) \text{ increasing} \rightarrow a=0 \rightarrow f(x) = \sqrt{bx+c}$$

$$f(1)=0 \rightarrow 1b+c=0 \rightarrow b=-c$$

$$f(2)=1 \rightarrow 2b+c=1 \rightarrow b=1, c=-2$$

$$f(x) = x-2$$

8

$$y = \frac{x^2 - 5x}{x+2} \rightarrow y = \frac{x(x-5)}{x+2} \rightarrow y = x(x-2)$$

$$D_f = R - \{a, b\} \rightarrow R - \{5, -2\}$$

$$R_f = [c, +\infty) - \{1\} \rightarrow [-1, +\infty) - \{1\}$$

9

$$y = \sqrt{ax^2 + bx + c} \rightarrow \sqrt{(ax+b)^2}$$

$$D_f = [-4, 12] \rightarrow x-2 \rightarrow R_f = [-1, 6]$$

$$a=2, b=4, c=12$$

10

$$x \in \left(\frac{1}{p}, 2\right) \rightarrow y = \left[x\right] + \left[x + \frac{1}{p}\right]$$

$$x + \frac{1}{p} \in [1, 2.5) \rightarrow 1 \leq x + \frac{1}{p} < 2 \rightarrow 1 \leq x < 1.5 \rightarrow y = 1 + 0 = 1$$

$$x + \frac{1}{p} \in [2, 2.5) \rightarrow 2 \leq x + \frac{1}{p} < 2.5 \rightarrow 1.5 \leq x < 2 \rightarrow y = 1 + 1 = 2$$

$$x + \frac{1}{p} \in [2.5, 3) \rightarrow 2.5 \leq x + \frac{1}{p} < 3 \rightarrow 2 \leq x < 2.5 \rightarrow y = 2 + 1 = 3$$

Elegance