

B. $\sqrt{2}, \sqrt{3}, \sqrt{5}, \sqrt{7}$

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$$y^r - rx^r = rx - 1$$

Case 1: $x=0 \rightarrow y^r = -1 \rightarrow y = -1$

Case 2: $x=1 \rightarrow y^r = 2 \rightarrow y = \sqrt[r]{2}$

$$\frac{x+y}{r} = \sqrt{xy} \Rightarrow x+y = r\sqrt{xy} \Rightarrow (\sqrt{x}-\sqrt{y})^2 = 0$$

$$\Rightarrow \sqrt{x} = \sqrt{y} \Rightarrow x = y$$

$$x \cos y = y \cos x \xrightarrow{x=y} x \cos x = 0$$

$$\cos x = 0 \rightarrow x = \frac{\pi}{2}$$

$$xy^r + rx - y^r - ry = 0 \Rightarrow xy^r + rx = y^r + ry$$

$$\Rightarrow x(y^r + r) = y(y^r + r) \Rightarrow x = y$$

$$y > x \rightarrow x^r - y = 0 \rightarrow x^r = y$$

$$y < x \rightarrow x^r - ry = 0 \rightarrow \frac{x^r}{r} = y$$

$$\rightarrow [y] + [x] = 1 \xrightarrow{x=0} [y] = 1 \rightarrow 1 \leq y < 2 \rightarrow \text{Yes}$$

$$f_n = \begin{cases} r_n^r - b & n \geq r, n \leq 1 \\ a + r_n & 0 \leq n \leq r \end{cases}$$

$r=1, r \rightarrow n \geq r$
 $n = 1, 5, r$

$$\rightarrow x=r \rightarrow 1n-b = a+r \rightarrow a+b=1r$$

$$\sqrt{a-bx-n^r} \quad D_f = [b, a] \Rightarrow \sqrt{-(x-a)(n-b)} = \sqrt{-x^r + (a+b)n - ab}$$

$$a+b = -b \rightarrow a = -rb \rightarrow a = r$$

$$-ab = a \rightarrow -b = 1 \rightarrow b = -1$$

$$a+b = 1$$

$$\sqrt{-x^r + (a+b)n - ab}$$

$$\downarrow$$

$$\sqrt{-n^r - bn + a}$$

$$\frac{r}{\sqrt{ax^r + bx + c}} \Rightarrow a = \dots$$

$$bx + c > 0 \rightarrow C = -rb \quad b < 0$$

$$(r, +\infty)$$

$$ra + c - r|b| = -rb + rb = 0$$

$$0 \quad -rb \quad \downarrow \quad b < 0$$

$$b < 0$$

