

مثالها

مثال) نمودار توابع قدر مطلق زیر را رسم کنید.

1) $y = |x| + x + 1$

2) $y = |x| + |x - 2|$

3) $y = |x + 1| - |3 - 2x| - x + 4$

4) $y = x + |x - 1| + |x - 2|$

5) $y = \frac{|x^2 - 1|}{x - 1}$

6) $y = x^2 |x|$

7) $y = -x^2 |x|$

8) $y = \frac{1}{|x|} + 2$

9) $y = |x^2 - 2x| + 2x - 1$

10) $y = \frac{|x|}{x}$

11) $y = x^2 |x| - 3x^2$

12) $y = \frac{|x|}{x - 1}$

13) $y = \frac{x}{|x - 1|}$

14) $y = \frac{|x^2 - 1|}{x}$

15) $y = \frac{|x|}{x^2 - 1}$

16) $y = |x| + \frac{1}{x}$

17) $y = \frac{x^2 + 1}{x \sqrt{\left(\frac{x^2 - 1}{2x}\right)^2 + 1}}$

18) $y = \frac{2x}{\sqrt{1 - \left(\frac{1 - x^2}{1 + x^2}\right)^2}}$

19) $y = \frac{\sqrt{x(x-2)^2}}{x-2}$

20) $y = \left(\sqrt{x + 2\sqrt{x-1}} + \sqrt{x - 2\sqrt{x-1}}\right)^2$

21) $y = \frac{\sqrt{\frac{1+x^2}{2x} + 1} - \sqrt{\frac{1+x^2}{2x} - 1}}{\sqrt{\frac{1+x^2}{2x} + 1} + \sqrt{\frac{1+x^2}{2x} - 1}}$

22) $y = \frac{1}{4} \left(\frac{\sqrt{1 + \sin x}}{\sqrt{1 - \sin x}} - \frac{\sqrt{1 - \sin x}}{\sqrt{1 + \sin x}} \right) \left(\frac{\sqrt{1 + \cos x}}{\sqrt{1 - \cos x}} - \frac{\sqrt{1 - \cos x}}{\sqrt{1 + \cos x}} \right)$

23) $y = \frac{x^3 - x^2}{2|x - 1|}$

24) $y = \sqrt{2(x + |x - 2|)}$

25) $y = |\sin x| + \sin |x|$

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26) $y = ||x-1| - x|$

27) $y = x(1-|x|)$

28) $y = \frac{x^2}{|x|}$

29) $y = \sqrt{(x-1)^2} + \sqrt{(x+2)^2} + 4$; $-1 \leq x \leq 1$