**1.** _____ .

  1  $\displaystyle\lim_{x\to\infty}\frac{1}{x^2+1}$

  2  $\displaystyle\lim_{x\to 0}\frac{x}{\sqrt{x+4}-2}$

  3  $\displaystyle\lim_{x\to\infty}\frac{2x+1}{x^2+2x+1}$

  4  $\displaystyle\lim_{x\to\infty}\frac{3x^2-5x+7}{5x^2-3x+2}$

**2.** _____ .

  1  $y=x\sqrt{x^2+1}$

  2  $y=\dfrac{x^2-2x+2}{x^2+x+1}$

  3  $y=\log(1+e^x)$

**3.**

1  $\int_1^2 \dfrac{1}{\sqrt[5]{x-1}}\, dx$

2  $\int_0^\infty \dfrac{dx}{(x+1)^3}$

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