Limits... Find them

Be able to justify your steps

1. $\lim_{x \to 16^+} \dfrac{x-16}{\sqrt{x}-4}$

2. $\lim_{x \to 1} \left(\dfrac{x^2}{x-1} - \dfrac{1}{x-1} \right)$

3. $\lim_{x \to -3} \dfrac{x+3}{\frac{1}{x}+\frac{1}{3}}$

4. $\lim_{x \to 2} \dfrac{|x-2|}{x-2}$

5. $\lim_{x \to \pi^-} \dfrac{|\pi - x|}{x-\pi}$

6. $\lim_{x \to 3} \dfrac{5x}{6-2x}$

7. $\lim_{x \to 3^+} \dfrac{x^2+x+2}{x^2-2x-3}$

8. $\lim_{x \to 3^-} \dfrac{x^2+x+2}{x^2-2x-3}$

9. $\lim_{x \to 0^+} x\sqrt{1+\frac{1}{x^2}}$

10. $\lim_{x \to 0^-} x\sqrt{1+\frac{1}{x^2}}$

Limits... Find them

Be able to justify your steps

1. $\lim_{x \to 16^+} \frac{x-16}{\sqrt{x}-4}$ 8

2. $\lim_{x \to 1} \left(\frac{x^2}{x-1} - \frac{1}{x-1} \right)$ 2

3. $\lim_{x \to -3} \frac{x+3}{\frac{1}{x}+\frac{1}{3}}$ −9

4. $\lim_{x \to 2} \frac{|x-2|}{x-2}$ DNE

5. $\lim_{x \to \pi^-} \frac{|\pi - x|}{x-\pi}$ −1

6. $\lim_{x \to 3} \frac{5x}{6-2x}$ DNE

7. $\lim_{x \to 3^+} \frac{x^2+x+2}{x^2-2x-3}$ ∞

8. $\lim_{x \to 3^-} \frac{x^2+x+2}{x^2-2x-3}$ $-\infty$

~~9.~~ $\lim_{x \to 0^+} x\sqrt{1+\frac{1}{x^2}}$

$x\sqrt{\frac{x^2+1}{x^2}}$

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

~~10.~~ $\lim_{x \to 0^-} x\sqrt{1+\frac{1}{x^2}}$