The following terms are ordered according to their degree (their power or exponent but not their coefficient which is ignored):

- $10x^{-4}$
- $1/x = x^{-1}$
- $1 = x^0$
- $\sqrt{x} = x^{1/2}$
- $x = x^1$
- $6x^2$
- $-3x^4$

**Infinite Limit Calculation**

Within each factor consisting of a sum of powers of $x$:

- omits terms not of highest power,
- simplifies, (what is left is the leading term)
- sticking $\infty$ or $-\infty$ into the leading term. The horizontal asymptote is $y = b$ if the limit is a finite number $b$.

### 1(2).

**Expression:** \[ \lim_{x \to -\infty} \frac{7 - x^3}{8 + x - x^2 + x^3} \]

**Lead term:** (2 symbols)\[7 - x^3\]

**Limit:** (2 symbols checksum=3)

### Horizontal Asymptote:

(4 symbols)

### 2(2).

**Expression:** \[ \lim_{x \to -\infty} \frac{3x + 7}{x^2 - 2} \]

**Lead term:** (3 symbols checksum=3)\[3x\]

**Limit:** (1 symbol)

### Horizontal Asymptote:

(3 symbols)

### 3(2).

**Expression:** \[ \lim_{x \to +\infty} \frac{2 + \sqrt{x}}{3 - 1/x} \]

**Lead term:** (4 symbols, checksum=3)\[\sqrt{x}\]

**Limit:** (checksum=0)\[\text{Ans. none}\]