1 $|x+3|+|x-2|<7$

2 $x=\frac{1}{\sqrt{3}-2}, y=\frac{1}{\sqrt{3}+2}$ $\frac{x^2+xy+y^2}{x+y}$

3 $3a^2+ab-2b^2=0(a\neq 0,b\neq 0)$ $\frac{a}{b}-\frac{b}{a}-\frac{a^2+b^2}{ab}$

4 $x=\frac{\sqrt{5}-1}{2}$ x^4+x^2+2x-1

5 $(x+y+z)(-x+y+z)(x-y+z)(x+y-z)$

$(\sqrt{18}-4\sqrt{\frac{1}{2}}+\frac{1}{\sqrt{2}-\sqrt{3}})\div\frac{\sqrt{3}}{3}$ $2\sqrt{\frac{2}{3}}\cdot\sqrt{2}-\sqrt{(2-\sqrt{5})^2}+\frac{1}{\sqrt{5}+2}$

$\frac{x\sqrt{x}+x\sqrt{y}}{xy-y^2}-\frac{x+\sqrt{xy}+y}{x\sqrt{x}-y\sqrt{y}}$ $(\sqrt{a}+\frac{b-\sqrt{ab}}{\sqrt{a}+\sqrt{b}})\div(\frac{a}{\sqrt{ab}+b}+\frac{b}{\sqrt{ab}-a}-\frac{a+b}{\sqrt{ab}})$

$ab(c^2-d^2)+cd(a^2-b^2)$

$x^2-4mx+8mn-4n^2$

x^4+64

$x^3-11x^2+31x-21$

$x^3-4xy^2-2x^2y+8y^3$

$a+b=\frac{2}{3}, ab=2$ $a^2b+2a^2b^2+ab^2$

$\frac{1}{2}x^2+x-1$ $\frac{1}{2}x^2+3x+1$ $\frac{1}{2}x^2-x$

$a+b+c=0$ $a^3+a^2c+b^2c-abc+b^3=0$

x_1, x_2 $2x^2 - 6x + 3 = 0$ $\frac{1}{x_1} + \frac{1}{x_2}$

2 -2 $\frac{1}{2}$ $\frac{9}{2}$

t $ax^2 + bx + c = 0$ $(a \neq 0)$

$\Delta = b^2 - 4ac$ $M = (2at + b)^2$

$\Delta = M$ $\Delta > M$ $\Delta < M$

x_1, x_2 $x^2 + px + q = 0$ $x_1 + 1, x_2 + 1$ x $x^2 + qx + p = 0$

p _____ q _____

a, b, c

$2x^2 + x < 0$

$x^2 - 3x - 18 \le 0$

$-x^2 + x \ge 3x + 1$

$x(x+9) > 3(x-3)$

$\frac{x+1}{x-1} \ge 0$

$\frac{3x+1}{2x-1} < 2$

$\frac{2}{x} > -1$

$\frac{2x^2 - x + 1}{2x+1} > 0$

$x^2 - 2x > 2x^2 + 2$

$\frac{1}{2}x^2 - \frac{1}{3}x + \frac{1}{5} \ge 0$

x $(m-2)x > 1-m$

x $mx^2 - x + m < 0$ m

$\frac{x+2}{k} > 1 + \frac{x-3}{k^2}$ $x > 3$ k

k

$y = x^2 - (m-4)x + 2m - 3$ m y

m x

m

l

$a > 0$ $-1 \le x \le 1$ $y = -x^2 - ax + b + 1$ -4

$y = x^2 + 2ax + 1$ $-1 \le x \le 2$ a

x $y = x^2 - 2tx + 1$ $-1 \le x \le 1$ t

$-4<x<3$ $-\frac{13}{6}\sqrt{3}$ -3 2 $3-\sqrt{5}$

$-x^4-y^4-z^4+2x^2y^2+2x^2z^2+2y^2z^2$

$(1)-3,(2)\frac{4\sqrt{3}}{3},(3)\frac{\sqrt{x}+\sqrt{y}}{y},(4)\sqrt{b}-\sqrt{a}$

$(1)(bc+ad)(ac-bd)$; $(2)(x-4m+2n)(x-2n)$; $(3)(x^2-4x+8)(x^2+4x+8)$;

$(4)(x-1)(x-3)(x-7)$; $(5)(x-2y)^2(x+2y)$

$\frac{28}{3}$

$(\frac{1}{2}x^2+x-1)+(\frac{1}{2}x^2+3x+1)=x^2+4x \quad =x(x+4)$

$(\frac{1}{2}x^2+x-1)+(\frac{1}{2}x^2-x)=x^2-1=(x+1)(x-1)$

$(\frac{1}{2}x^2+3x+1)+(\frac{1}{2}x^2-x)=x^2+2x+1=(x+1)^2$

$a^3+a^2c+b^2c-abc+b^3=(a^2-ab+b^2)(a+b+c)$

$p=-1,q=-3$ $a=3,b=3,c=0$

$m=1$ $k=3$ $3x+1=0$ $k\neq 3$ $\Delta>0$

$k\geq\frac{3}{4}$ $k\neq 1$ $k=7$

$(1)-\frac{1}{2}<x<0$ $(2)-3\leq x\leq 6$ $(3)x=-1$ $(4)x\neq -3$

$(1)x\leq -1$ $x>1$ $(2)x<\frac{1}{2}$ $x>3$ $(3)x<-2$ $x>0$ $(4)x>-\frac{1}{2}$

$m>2$ $x>\frac{1-m}{m-2}$ $m<2$ $x<\frac{1-m}{m-2}$ $m=2$ x

$m<-\frac{1}{2}$ $k=5$ $a\leq -5$ $a\geq 1$

$\frac{3}{2}$ $\frac{l^2}{16}m^2$ $a=2,b=-2$ $a=-\frac{1}{4}$ $a=-1$

$t\leq 0$ $y_{\max}=2-2t$ $x=1$ $t>0$ $y_{\max}=2+2t$ $x=-1$