



CAMI Wiskunde: Graad 11

GRAAD 11 Kwadratiese ongelykhede

11.4 Kwadratiese ongelykhede

1. Los die volgende ongelykhede grafies op

(a) $3x^2 - 6x - 144 \leq 0$

(b) $-x^2 + 9x - 8 > 0$

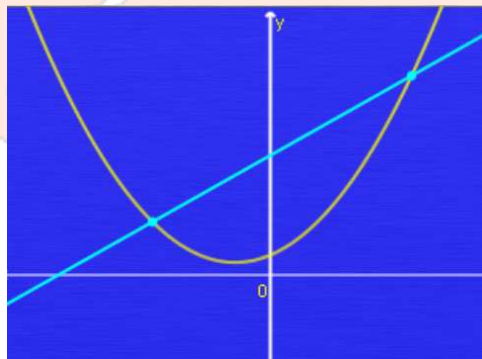
(c) $-2x^2 - 2x + 12 \geq 0$

(d) $-x^2 + x + 6 < 0$

(e) $-x^2 + 3x + 54 > 0$

2. Interpretasies van grafieke

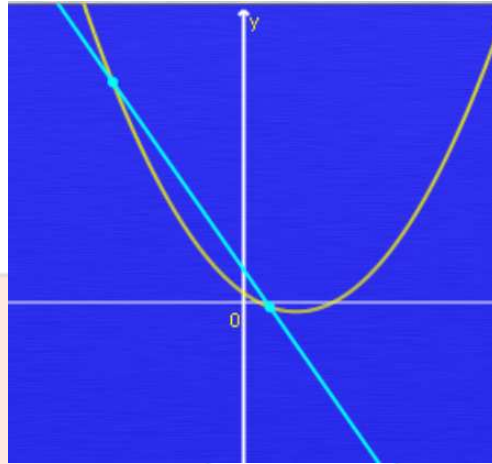
(a) As $f(x) = x^2 + 3x + 6$ en $g(x) = 4x + 36$ is gegee, bepaal vir watter waarde(s) van x sal $f(x) \leq g(x)$.



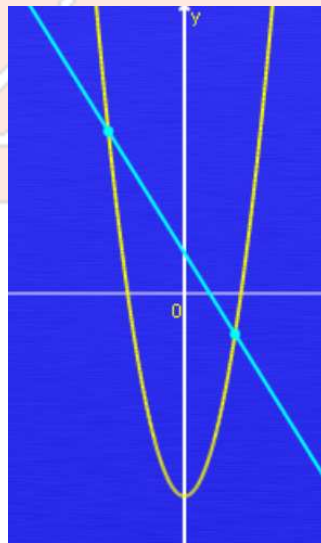
(b) As $f(x) = x^2 - 4x + 2$ en $g(x) = -8x + 7$ is gegee, bepaal vir watter waarde(s) van x sal $f(x) > g(x)$.



CAMI Wiskunde: Graad 11



(c) As $f(x) = x^2 - 5$ en $g(x) = -x + 1$ is gegee, bepaal vir watter waarde(s) van x is $f(x) < g(x)$.



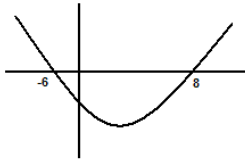


CAMI Wiskunde: Graad 11

MEMO

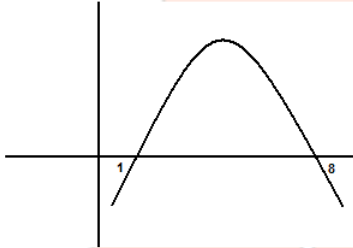
1. Los die volgende ongelykhede grafies op [5.3.2.2]

(a) $3x^2 - 6x - 144 \leq 0$
 $(x - 8)(x + 6) = 0$
 $x = 8; x = -6$



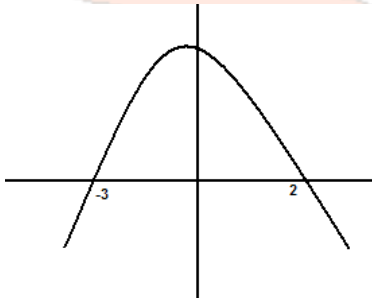
$$\therefore -6 \leq x \leq 8$$

(b) $-x^2 + 9x - 8 > 0$
 $(x - 8)(x - 1) = 0$
 $x = 8; x = 1$

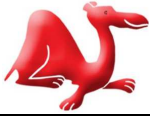


$$\therefore 1 < x < 8$$

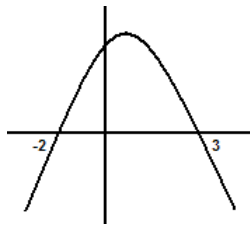
(c) $-2x^2 - 2x + 12 \geq 0$
 $(x + 3)(x - 2) = 0$
 $x = -3; x = 2$



(d) $-x^2 + x + 6 < 0$
 $(x - 3)(x + 2) = 0$
 $x = 3; x = -2$

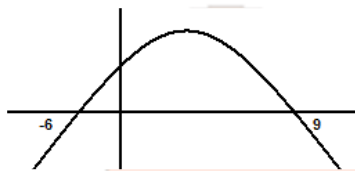


CAMI Wiskunde: Graad 11



$$\therefore x < -2 \text{ of } x > 3$$

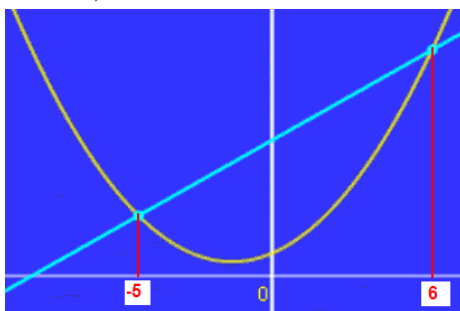
(e) $-x^2 + 3x + 54 > 0$
 $(x-9)(x+6) = 0$
 $x = 9; x = -6$



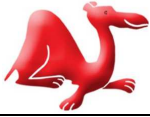
$$\therefore -6 < x < 9$$

2. Interpretasies van grafieke [6.8.2.2]

(a) Snypunte van grafieke:
 $x^2 + 3x + 6 = 4x + 36$
 $x^2 - x - 30 = 0$
 $(x-6)(x+5) = 0$
 $x = 6; x = -5$



$$\therefore -5 \leq x \leq 6$$



CAMI Wiskunde: Graad 11

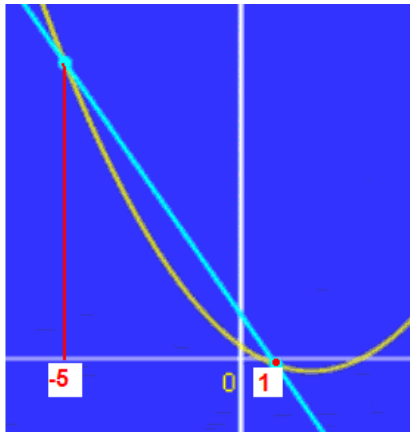
(b) Snypunte van grafieke:

$$x^2 - 4x + 2 = -8x + 7$$

$$x^2 + 4x - 5 = 0$$

$$(x + 5)(x - 1) = 0$$

$$x = -5; x = 1$$



$\therefore x < -5$ of $x > 1$

(c) Snypunte van grafieke:

$$x^2 - 5 = -x + 1$$

$$x^2 + x - 6 = 0$$

$$(x + 3)(x - 2) = 0$$

$$x = -3; x = 2$$