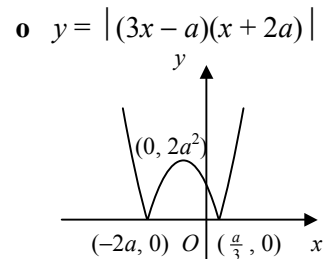
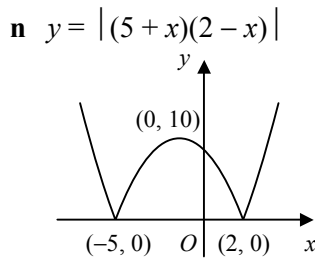
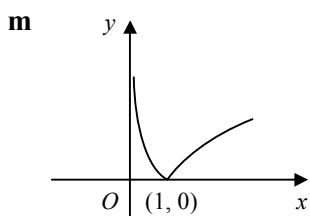
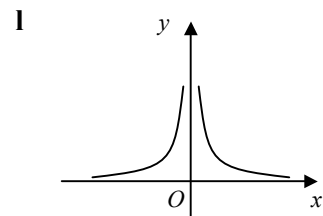
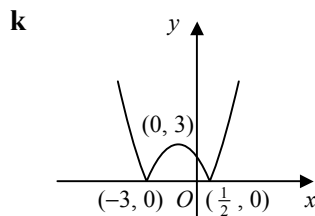
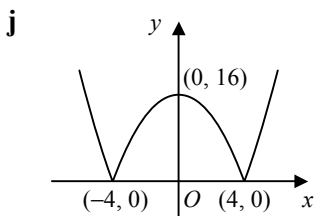
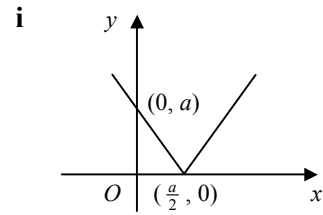
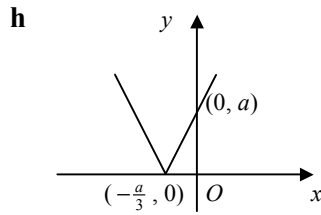
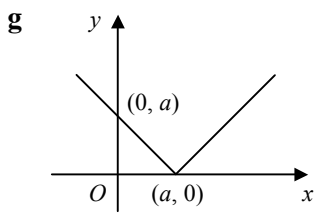
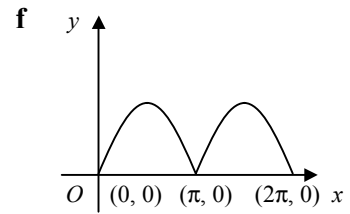
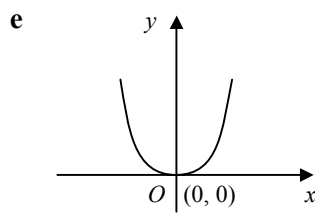
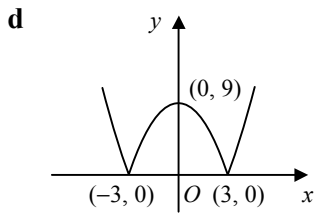
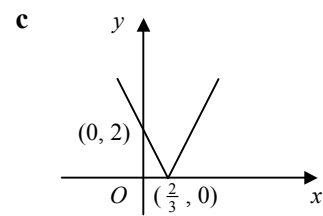
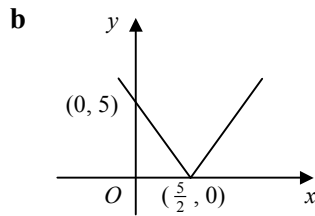
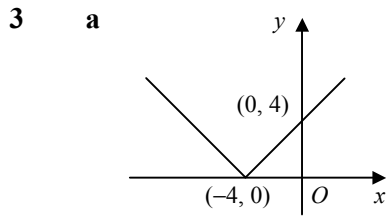
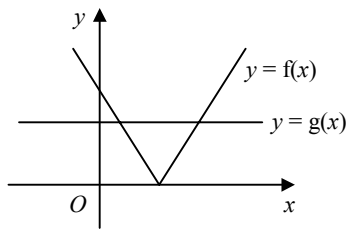


1 a 2 b 1 c 6 d -2 e 4 f -3

2 a = $g(-3) = 5$ b = $f(1) = 0$ c = $f(9) = 96$ d = $g(5) = 11$ e = $g(0) = 1$ f = $f(1) = 0$



4 a

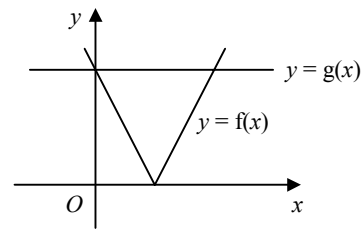


$$2x - 3 = 2 \Rightarrow x = \frac{5}{2}$$

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

$$\therefore x = \frac{1}{2}, \frac{5}{2}$$

b

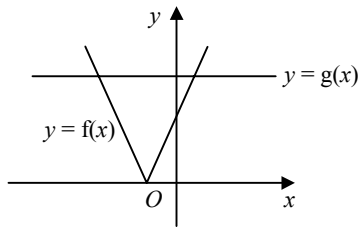


$$7 - 3x = 7 \Rightarrow x = 0$$

$$-(7 - 3x) = 7 \Rightarrow x = 4\frac{2}{3}$$

$$\therefore x = 0, 4\frac{2}{3}$$

c

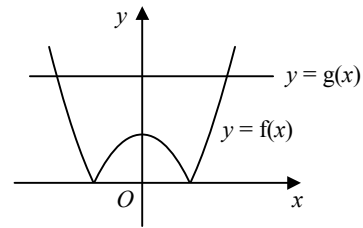


$$4x + 3a = 5a \Rightarrow x = \frac{1}{2}a$$

$$-(4x + 3a) = 5a \Rightarrow x = -2a$$

$$\therefore x = -2a, \frac{1}{2}a$$

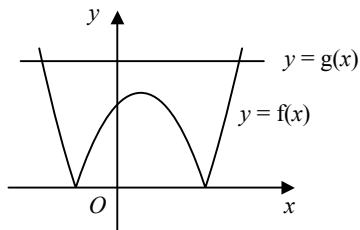
d



$$x^2 - 4 = 9 \Rightarrow x^2 = 13$$

$$\therefore x = \pm\sqrt{13}$$

e $f(x) = |(x-2)^2 - 16|$

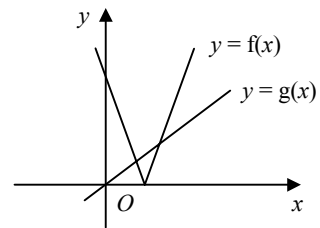


$$x^2 - 4x - 12 = 20 \Rightarrow x^2 - 4x - 32 = 0$$

$$\Rightarrow (x+4)(x-8) = 0$$

$$\therefore x = -4, 8$$

f



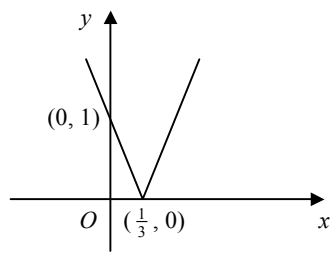
$$2a - 5x = x \Rightarrow x = \frac{1}{3}a$$

$$-(2a - 5x) = x \Rightarrow x = \frac{1}{2}a$$

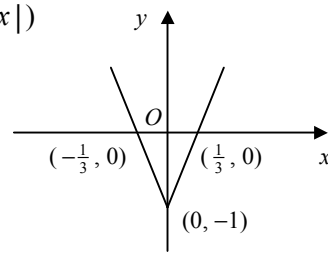
$$\therefore x = \frac{1}{3}a, \frac{1}{2}a$$

- 5
- a** $x = 5 \pm 3$
 $x = 2, 8$
- b** $x = -1 \pm 15$
 $x = -16, 14$
- c** $2x = 7 \pm 4$
 $2x = 3, 11$
 $x = \frac{3}{2}, \frac{11}{2}$
- d** $(x-2)^2 = (x+4)^2$
 $x^2 - 4x + 4 = x^2 + 8x + 16$
 $12x = -12$
 $x = -1$
- e** $(x-5)^2 = (7-x)^2$
 $x^2 - 10x + 25 = 49 - 14x + x^2$
 $4x = 24$
 $x = 6$
- f** $(2x+1)^2 = (9-2x)^2$
 $4x^2 + 4x + 1 = 81 - 36x + 4x^2$
 $40x = 80$
 $x = 2$
- g** $(x+3)^2 = (2x)^2$
 $x^2 + 6x + 9 = 4x^2$
 $x^2 - 2x - 3 = 0$
 $(x+1)(x-3) = 0$
 $x = -1, 3$
- h** $(4x-1)^2 = (2-x)^2$
 $16x^2 - 8x + 1 = 4 - 4x + x^2$
 $15x^2 - 4x - 3 = 0$
 $(5x-3)(3x+1) = 0$
 $x = -\frac{1}{3}, \frac{3}{5}$
- i** $(3x-4)^2 = (2x+3)^2$
 $9x^2 - 24x + 16 = 4x^2 + 12x + 9$
 $5x^2 - 36x + 7 = 0$
 $(5x-1)(x-7) = 0$
 $x = \frac{1}{5}, 7$
- 6
- a** $20 - 2 < x < 20 + 2$
 $18 < x < 22$
- b** $3 - 8 < x < 3 + 8$
 $-5 < x < 11$
- c** $11 - 5 \leq 2x \leq 11 + 5$
 $6 \leq 2x \leq 16$
 $3 \leq x \leq 8$
- d** $|3x - 18| < 9$
 $18 - 9 < 3x < 18 + 9$
 $9 < 3x < 27$
 $3 < x < 9$
- e** $-5 - 3 \leq x \leq -5 + 3$
 $-8 \leq x \leq -2$
- f** $x < 17 - 12$ or $x > 17 + 12$
 $x < 5$ or $x > 29$
- g** $22 - 40 < 5x < 22 + 40$
 $-18 < 5x < 62$
 $-3.6 < x < 12.4$
- h** $18 - 14 \leq 2^x \leq 18 + 14$
 $4 \leq 2^x \leq 32$
 $2 \leq x \leq 5$
- i** $14 - 13 < x^3 < 14 + 13$
 $1 < x^3 < 27$
 $1 < x < 3$
- j** $(x+4)^2 \leq (x+1)^2$
 $x^2 + 8x + 16 \leq x^2 + 2x + 1$
 $6x \leq -15$
 $x \leq -\frac{5}{2}$
- k** $(x+2)^2 > (2x-5)^2$
 $x^2 + 4x + 4 > 4x^2 - 20x + 25$
 $x^2 - 8x + 7 < 0$
 $(x-1)(x-7) < 0$
 $1 < x < 7$
- l** $(2x-1)^2 < (3x+2)^2$
 $4x^2 - 4x + 1 < 9x^2 + 12x + 4$
 $5x^2 + 16x + 3 > 0$
 $(5x+1)(x+3) > 0$
 $x < -3$ or $x > -\frac{1}{5}$

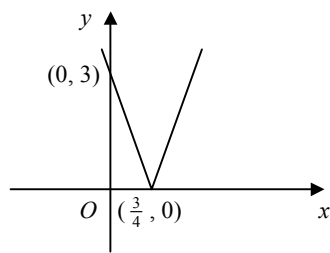
7 a $y = |f(x)|$



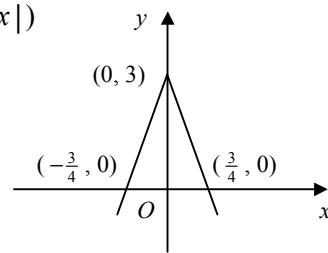
$y = f(|x|)$



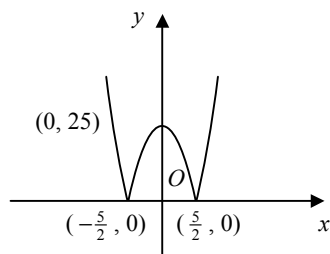
b $y = |f(x)|$



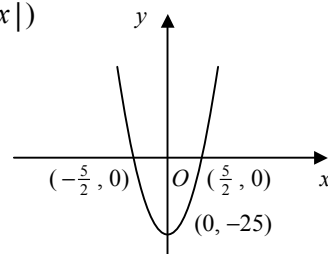
$y = f(|x|)$



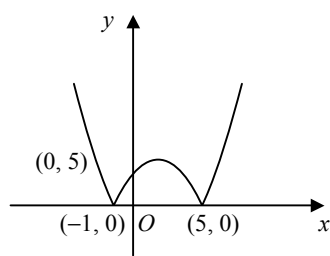
c $y = |f(x)|$



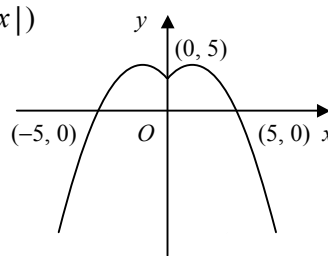
$y = f(|x|)$



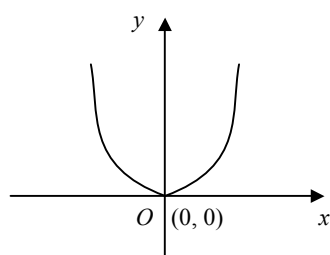
d $y = |f(x)|$



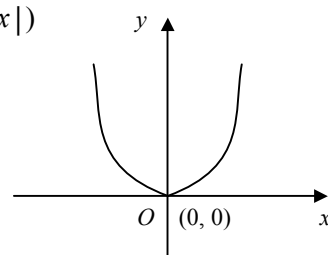
$y = f(|x|)$



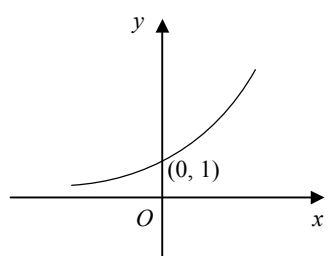
e $y = |f(x)|$



$y = f(|x|)$



f $y = |f(x)|$



$y = f(|x|)$

