

1.  $f(x) = x + 3$ ,  $g(x) = 7$ . Solve  $f(x) = g(x)$ .

$$x + 3 = 7$$

**Answer:  $x = 4$**

2.  $f$  and  $g$  cross at  $(2, 5)$  and  $(6, 1)$ . Solve  $f(x) = g(x)$ .

Solutions are the  $x$ -values only

**Answer:  $x = 2$  and  $x = 6$**

3.  $f(x) = 2x + 1$ ,  $g(x) = x + 4$ . Solve graphically or by algebra.

$$2x + 1 = x + 4$$

**Answer:  $x = 3$**

4. Solve  $x^2 = 9$  by graphing  $y = x^2$  and  $y = 9$ .

Crossings at  $x = \pm 3$

**Answer:  $x = 3$ ,  $x = -3$**

5.  $f(x) = 3x - 2$ ,  $g(x) = -x + 6$ .

$$3x - 2 = -x + 6; 4x = 8$$

**Answer:  $x = 2$**

6. Why does the INTERSECTION solve  $f(x) = g(x)$ ?

Same  $x$  gives same  $y$  on both

**Answer: both sides equal there**

7.  $f(x) = x^2 - 4$  and  $g(x) = 0$ : what are the solutions called?

Where the parabola meets the  $x$ -axis

**Answer: zeros:  $x = 2$ ,  $-2$**

8.  $f(x) = |x|$ ,  $g(x) = 4$ . Solve.

V meets flat line twice

**Answer:  $x = 4$ ,  $x = -4$**

9.  $f(x) = x^2$  and  $g(x) = 2x + 3$ . Solve  $f = g$ . ★ challenge

$$x^2 - 2x - 3 = 0$$

$$(x - 3)(x + 1) = 0$$

**Answer:  $x = 3$  and  $x = -1$**

10.  $f(x) = |4x + 2|$ ,  $g(x) = 3x + 5$ . Show  $x = 3$  is a solution; is  $x = -1$  also one? (Trainer echo!) ★ challenge

$$f(3) = 14, g(3) = 14 \text{ yes}$$

$$f(-1) = 2, g(-1) = 2 \text{ - check it!}$$

**Answer:  $x = 3$  works;  $x = -1$  also checks**