

Delta — oblicz wyróżnik

Dla każdego równania policz $\Delta = b^2 - 4ac$ i zapisz, ile ma pierwiastków.

$\Delta > 0 \rightarrow$ dwa pierwiastki · $\Delta = 0 \rightarrow$ jeden · $\Delta < 0 \rightarrow$ brak

1.	$x^2 + 5x - 7 = 0$	$\Delta =$	pierwiastki:
2.	$x^2 + x + 3 = 0$	$\Delta =$	pierwiastki:
3.	$x^2 + 3x - 4 = 0$	$\Delta =$	pierwiastki:
4.	$x^2 - 4x - 1 = 0$	$\Delta =$	pierwiastki:
5.	$x^2 - 7x + 1 = 0$	$\Delta =$	pierwiastki:
6.	$x^2 - 7x - 1 = 0$	$\Delta =$	pierwiastki:
7.	$x^2 + 4x + 7 = 0$	$\Delta =$	pierwiastki:
8.	$x^2 - 4x + 1 = 0$	$\Delta =$	pierwiastki:
9.	$x^2 - 2x + 3 = 0$	$\Delta =$	pierwiastki:
10.	$2x^2 + 3x - 4 = 0$	$\Delta =$	pierwiastki:
11.	$2x^2 + 2x + 1 = 0$	$\Delta =$	pierwiastki:
12.	$-x^2 - 6x - 3 = 0$	$\Delta =$	pierwiastki:
13.	$x^2 + x + 6 = 0$	$\Delta =$	pierwiastki:
14.	$x^2 + 7x - 6 = 0$	$\Delta =$	pierwiastki:
15.	$x^2 + 4x + 3 = 0$	$\Delta =$	pierwiastki:
16.	$-x^2 - 7x - 4 = 0$	$\Delta =$	pierwiastki:
17.	$x^2 + 9x - 7 = 0$	$\Delta =$	pierwiastki:
18.	$x^2 + 8x + 7 = 0$	$\Delta =$	pierwiastki:

Rozwiąż równanie

Policz deltę, a potem pierwiastki. Jeśli $\Delta < 0$, napisz „brak rozwiązań”.

Jeśli $\Delta = 0$, równanie ma jeden pierwiastek — wpisz go w oba pola, x_1 i x_2 .

1. $2x^2 + 10x = 0$ $\Delta = \dots\dots\dots$ $x_1 = \dots\dots\dots$ $x_2 = \dots\dots\dots$

2. $x^2 + 6x + 9 = 0$ $\Delta = \dots\dots\dots$ $x_1 = \dots\dots\dots$ $x_2 = \dots\dots\dots$

3. $x^2 + 7x + 10 = 0$ $\Delta = \dots\dots\dots$ $x_1 = \dots\dots\dots$ $x_2 = \dots\dots\dots$

4. $x^2 + 4x - 12 = 0$ $\Delta = \dots\dots\dots$ $x_1 = \dots\dots\dots$ $x_2 = \dots\dots\dots$

5. $x^2 + x - 12 = 0$ $\Delta = \dots\dots\dots$ $x_1 = \dots\dots\dots$ $x_2 = \dots\dots\dots$

6. $x^2 + 5x - 6 = 0$ $\Delta = \dots\dots\dots$ $x_1 = \dots\dots\dots$ $x_2 = \dots\dots\dots$

7. $x^2 + 12x + 36 = 0$ $\Delta = \dots\dots\dots$ $x_1 = \dots\dots\dots$ $x_2 = \dots\dots\dots$

8. $x^2 - 3x - 4 = 0$ $\Delta = \dots\dots\dots$ $x_1 = \dots\dots\dots$ $x_2 = \dots\dots\dots$

9. $2x^2 - 4x = 0$ $\Delta = \dots\dots\dots$ $x_1 = \dots\dots\dots$ $x_2 = \dots\dots\dots$

10. $2x^2 + 4x - 6 = 0$ $\Delta = \dots\dots\dots$ $x_1 = \dots\dots\dots$ $x_2 = \dots\dots\dots$

11. $2x^2 + 6x - 8 = 0$ $\Delta = \dots\dots\dots$ $x_1 = \dots\dots\dots$ $x_2 = \dots\dots\dots$

12. $x^2 + 5x + 6 = 0$ $\Delta = \dots\dots\dots$ $x_1 = \dots\dots\dots$ $x_2 = \dots\dots\dots$

13. $x^2 + 2x + 5 = 0$ $\Delta = \dots\dots\dots$ $x_1 = \dots\dots\dots$ $x_2 = \dots\dots\dots$

14. $x^2 - 6x + 9 = 0$ $\Delta = \dots\dots\dots$ $x_1 = \dots\dots\dots$ $x_2 = \dots\dots\dots$

15. $x^2 + 4x + 4 = 0$ $\Delta = \dots\dots\dots$ $x_1 = \dots\dots\dots$ $x_2 = \dots\dots\dots$

16. $2x^2 + 3x + 7 = 0$ $\Delta = \dots\dots\dots$ $x_1 = \dots\dots\dots$ $x_2 = \dots\dots\dots$

Klucz odpowiedzi

Dla nauczyciela i rodzica.

Zestaw 1 — delta

1.	$x^2 + 5x - 7 = 0$	$\Delta = 53$	dwa
2.	$x^2 + x + 3 = 0$	$\Delta = -11$	brak
3.	$x^2 + 3x - 4 = 0$	$\Delta = 25$	dwa
4.	$x^2 - 4x - 1 = 0$	$\Delta = 20$	dwa
5.	$x^2 - 7x + 1 = 0$	$\Delta = 45$	dwa
6.	$x^2 - 7x - 1 = 0$	$\Delta = 53$	dwa
7.	$x^2 + 4x + 7 = 0$	$\Delta = -12$	brak
8.	$x^2 - 4x + 1 = 0$	$\Delta = 12$	dwa
9.	$x^2 - 2x + 3 = 0$	$\Delta = -8$	brak
10.	$2x^2 + 3x - 4 = 0$	$\Delta = 41$	dwa
11.	$2x^2 + 2x + 1 = 0$	$\Delta = -4$	brak
12.	$-x^2 - 6x - 3 = 0$	$\Delta = 24$	dwa
13.	$x^2 + x + 6 = 0$	$\Delta = -23$	brak
14.	$x^2 + 7x - 6 = 0$	$\Delta = 73$	dwa
15.	$x^2 + 4x + 3 = 0$	$\Delta = 4$	dwa
16.	$-x^2 - 7x - 4 = 0$	$\Delta = 33$	dwa
17.	$x^2 + 9x - 7 = 0$	$\Delta = 109$	dwa
18.	$x^2 + 8x + 7 = 0$	$\Delta = 36$	dwa

Zestaw 2 — pierwiastki

1.	$2x^2 + 10x = 0$	$\Delta = 100$	$x_1 = -5, x_2 = 0$
2.	$x^2 + 6x + 9 = 0$	$\Delta = 0$	$x_1 = x_2 = -3$
3.	$x^2 + 7x + 10 = 0$	$\Delta = 9$	$x_1 = -5, x_2 = -2$
4.	$x^2 + 4x - 12 = 0$	$\Delta = 64$	$x_1 = -6, x_2 = 2$
5.	$x^2 + x - 12 = 0$	$\Delta = 49$	$x_1 = -4, x_2 = 3$
6.	$x^2 + 5x - 6 = 0$	$\Delta = 49$	$x_1 = -6, x_2 = 1$
7.	$x^2 + 12x + 36 = 0$	$\Delta = 0$	$x_1 = x_2 = -6$
8.	$x^2 - 3x - 4 = 0$	$\Delta = 25$	$x_1 = -1, x_2 = 4$
9.	$2x^2 - 4x = 0$	$\Delta = 16$	$x_1 = 0, x_2 = 2$
10.	$2x^2 + 4x - 6 = 0$	$\Delta = 64$	$x_1 = -3, x_2 = 1$
11.	$2x^2 + 6x - 8 = 0$	$\Delta = 100$	$x_1 = -4, x_2 = 1$
12.	$x^2 + 5x + 6 = 0$	$\Delta = 1$	$x_1 = -3, x_2 = -2$
13.	$x^2 + 2x + 5 = 0$	$\Delta = -16$	brak rozwiązań
14.	$x^2 - 6x + 9 = 0$	$\Delta = 0$	$x_1 = x_2 = 3$
15.	$x^2 + 4x + 4 = 0$	$\Delta = 0$	$x_1 = x_2 = -2$
16.	$2x^2 + 3x + 7 = 0$	$\Delta = -47$	brak rozwiązań