Task card 1 Zeros & Multiplicity

List the zeros of $f(x) = (x + 9)^3(x + 5)^4(x - 4)^2$ in increasing order, separated by commas.

Task card 2 Zeros & Multiplicity

At $x = 1$, does the graph of $f(x) = 2(x + 8)^4(x + 2)^2(x - 1)^2$ cross or touch the x-axis? Write cross or touch.

Task card 3 Zeros & Multiplicity

What is the multiplicity of the zero $x = 0$ of $f(x) = -3x^4(x + 7)^4(x + 5)^4$?

Task card 4 Zeros & Multiplicity

What is the degree of $f(x) = x(x + 6)(x - 7)^2$?

Task card 5 Zeros & Multiplicity

At $x = -3$, does the graph of $f(x) = 2x(x + 5)^3(x + 3)$ cross or touch the x-axis? Write cross or touch.

Task card 6 Zeros & Multiplicity

List the zeros of $f(x) = 2(x - 2)(x - 7)^4(x - 8)^2$ in increasing order, separated by commas.

Task card 7 Zeros & Multiplicity

List the zeros of $f(x) = 2(x + 1)^2(x - 2)^4(x - 4)^3$ in increasing order, separated by commas.

Task card 8 Zeros & Multiplicity

At $x = 5$, does the graph of $f(x) = x^2(x + 1)^3(x - 5)$ cross or touch the x-axis? Write cross or touch.

Task card 9 Zeros & Multiplicity

What is the multiplicity of the zero $x = -1$ of $f(x) = x^4(x + 4)^4(x + 1)$?

Task card 10 Zeros & Multiplicity

What is the degree of $f(x) = 2(x + 6)^3(x - 8)^4(x - 9)^3$?

Task card 11 Zeros & Multiplicity

At $x = 5$, does the graph of $f(x) = -3(x - 2)(x - 5)(x - 7)^4$ cross or touch the x-axis? Write cross or touch.

Task card 12 Zeros & Multiplicity

List the zeros of $f(x) = -(x + 4)^2(x - 3)^3(x - 6)^2$ in increasing order, separated by commas.

Task card 13 Zeros & Multiplicity

List the zeros of $f(x) = (x + 3)^4(x - 2)^2(x - 8)^4$ in increasing order, separated by commas.

Task card 14 Zeros & Multiplicity

At $x = 3$, does the graph of $f(x) = (x + 4)(x - 1)^4(x - 3)^2$ cross or touch the x-axis? Write cross or touch.

Task card 15 Zeros & Multiplicity

What is the multiplicity of the zero $x = -8$ of $f(x) = x^2(x + 8)^2(x - 7)^4$?

Task card 16 Zeros & Multiplicity

What is the degree of $f(x) = (x + 3)^2(x + 2)^2(x - 9)^4$?

Task card 17 Zeros & Multiplicity

At $x = 6$, does the graph of $f(x) = (x + 6)^4(x - 2)^3(x - 6)$ cross or touch the x-axis? Write cross or touch.

Task card 18 Zeros & Multiplicity

List the zeros of $f(x) = x(x + 8)^2(x + 7)^2$ in increasing order, separated by commas.

Task card 19 Zeros & Multiplicity

List the zeros of $f(x) = -(x + 7)^4(x + 6)^2(x - 6)^3$ in increasing order, separated by commas.

Task card 20 Zeros & Multiplicity

At $x = -9$, does the graph of $f(x) = (x + 9)^4(x + 7)^2(x - 8)^4$ cross or touch the x-axis? Write cross or touch.

Task card 21 Zeros & Multiplicity

What is the multiplicity of the zero $x = -8$ of $f(x) = -(x + 8)(x - 3)^4(x - 8)^2$?

Task card 22 Zeros & Multiplicity

What is the degree of $f(x) = (x - 2)^2(x - 3)^3(x - 7)^2$?

Task card 23 Zeros & Multiplicity

At $x = -6$, does the graph of $f(x) = (x + 9)(x + 8)(x + 6)^4$ cross or touch the x-axis? Write cross or touch.

Task card 24 Zeros & Multiplicity

List the zeros of $f(x) = (x + 9)^4(x + 7)^4(x + 3)^4$ in increasing order, separated by commas.

Zeros & Multiplicity Task Cards

Recording sheet · Grade 11 · Answer each question about the polynomial function.

Name: _____ Date: _____

Scan to check your answers

1	2	3	4
5	6	7	8
9	10	11	12
13	14	15	16
17	18	19	20
21	22	23	24

Zeros & Multiplicity Task Cards: Answer Key

Grade 11 · Hard

The answers online

1. -9, -5, 4	**2.** touch	**3.** 4
4. 4	**5.** cross	**6.** 2, 7, 8
7. -1, 2, 4	**8.** cross	**9.** 1
10. 10	**11.** cross	**12.** -4, 3, 6
13. -3, 2, 8	**14.** touch	**15.** 2
16. 8	**17.** cross	**18.** -8, -7, 0
19. -7, -6, 6	**20.** touch	**21.** 1
22. 7	**23.** touch	**24.** -9, -7, -3