Algebra 2 Name_____ ID: 1

Assignment

Date_____ Period____

Find all roots.

1) $x^6 - 9x^3 + 8 = 0$

2) $x^8 - 29x^4 + 100 = 0$

3) $x^6 + 28x^3 + 27 = 0$

4) $x^8 - 26x^4 + 25 = 0$

5) $x^6 - 28x^3 + 27 = 0$

6) $x^8 - 10x^4 + 9 = 0$

7) $x^8 - 20x^4 + 64 = 0$

8) $x^6 + 63x^3 - 64 = 0$

9) $x^8 - 18x^4 + 81 = 0$

10) $x^6 - 124x^3 - 125 = 0$

11) $x^8 - 25x^4 + 144 = 0$

12) $x^8 - 34x^4 + 225 = 0$

13) $x^6 + 9x^3 + 8 = 0$

14) $x^8 - 17x^4 + 16 = 0$

15) $x^6 + 26x^3 - 27 = 0$

16) $x^8 - 2x^4 + 1 = 0$

17) $x^8 - 5x^4 + 4 = 0$

18) $x^6 + 65x^3 + 64 = 0$

19) $x^8 - 13x^4 + 36 = 0$

20) $x^6 - 65x^3 + 64 = 0$

21) $x^6 - 63x^3 - 64 = 0$

22) $x^6 - 26x^3 - 27 = 0$

23) $x^8 - 32x^4 + 256 = 0$

24) $x^8 - 8x^4 + 16 = 0$

Algebra 2 Name_____ ID: 1

Assignment

Date_____ Period____

Find all roots.

1) $x^6 - 9x^3 + 8 = 0$

$\left\{2, -1 + i\sqrt{3}, -1 - i\sqrt{3}, 1, \frac{-1 + i\sqrt{3}}{2}, \frac{-1 - i\sqrt{3}}{2}\right\}$

2) $x^8 - 29x^4 + 100 = 0$

$\{\sqrt{2}, -\sqrt{2}, i\sqrt{2}, -i\sqrt{2}, \sqrt{5}, -\sqrt{5}, i\sqrt{5}, -i\sqrt{5}\}$

3) $x^6 + 28x^3 + 27 = 0$

$\left\{-1, \frac{1 + i\sqrt{3}}{2}, \frac{1 - i\sqrt{3}}{2}, -3, \frac{3 + 3i\sqrt{3}}{2}, \frac{3 - 3i\sqrt{3}}{2}\right\}$

4) $x^8 - 26x^4 + 25 = 0$

$\{\sqrt{5}, -\sqrt{5}, i\sqrt{5}, -i\sqrt{5}, 1, -1, i, -i\}$

5) $x^6 - 28x^3 + 27 = 0$

$\left\{1, \frac{-1 + i\sqrt{3}}{2}, \frac{-1 - i\sqrt{3}}{2}, 3, \frac{-3 + 3i\sqrt{3}}{2}, \frac{-3 - 3i\sqrt{3}}{2}\right\}$

6) $x^8 - 10x^4 + 9 = 0$

$\{\sqrt{3}, -\sqrt{3}, i\sqrt{3}, -i\sqrt{3}, 1, -1, i, -i\}$

7) $x^8 - 20x^4 + 64 = 0$

$\{\sqrt{2}, -\sqrt{2}, i\sqrt{2}, -i\sqrt{2}, 2, -2, 2i, -2i\}$

8) $x^6 + 63x^3 - 64 = 0$

$\left\{1, \frac{-1 + i\sqrt{3}}{2}, \frac{-1 - i\sqrt{3}}{2}, -4, 2 + 2i\sqrt{3}, 2 - 2i\sqrt{3}\right\}$

9) $x^8 - 18x^4 + 81 = 0$

$\{\sqrt{3}$ mult. 2, $-\sqrt{3}$ mult. 2, $i\sqrt{3}$ mult. 2, $-i\sqrt{3}$ mult. 2$\}$

10) $x^6 - 124x^3 - 125 = 0$

$\left\{5, \frac{-5 + 5i\sqrt{3}}{2}, \frac{-5 - 5i\sqrt{3}}{2}, -1, \frac{1 + i\sqrt{3}}{2}, \frac{1 - i\sqrt{3}}{2}\right\}$

11) $x^8 - 25x^4 + 144 = 0$

$\{2, -2, 2i, -2i, \sqrt{3}, -\sqrt{3}, i\sqrt{3}, -i\sqrt{3}\}$

12) $x^8 - 34x^4 + 225 = 0$

$\{\sqrt{5}, -\sqrt{5}, i\sqrt{5}, -i\sqrt{5}, \sqrt{3}, -\sqrt{3}, i\sqrt{3}, -i\sqrt{3}\}$

13) $x^6 + 9x^3 + 8 = 0$

$\left\{-1, \frac{1 + i\sqrt{3}}{2}, \frac{1 - i\sqrt{3}}{2}, -2, 1 + i\sqrt{3}, 1 - i\sqrt{3}\right\}$

14) $x^8 - 17x^4 + 16 = 0$

$\{2, -2, 2i, -2i, 1, -1, i, -i\}$

15) $x^6 + 26x^3 - 27 = 0$

$\left\{1, \frac{-1 + i\sqrt{3}}{2}, \frac{-1 - i\sqrt{3}}{2}, -3, \frac{3 + 3i\sqrt{3}}{2}, \frac{3 - 3i\sqrt{3}}{2}\right\}$

16) $x^8 - 2x^4 + 1 = 0$

$\{1$ mult. 2, -1 mult. 2, i mult. 2, $-i$ mult. 2$\}$

17) $x^8 - 5x^4 + 4 = 0$

$\{1, -1, i, -i, \sqrt{2}, -\sqrt{2}, i\sqrt{2}, -i\sqrt{2}\}$

18) $x^6 + 65x^3 + 64 = 0$

$\left\{-1, \frac{1 + i\sqrt{3}}{2}, \frac{1 - i\sqrt{3}}{2}, -4, 2 + 2i\sqrt{3}, 2 - 2i\sqrt{3}\right\}$

19) $x^8 - 13x^4 + 36 = 0$

$\{\sqrt{3}, -\sqrt{3}, i\sqrt{3}, -i\sqrt{3}, \sqrt{2}, -\sqrt{2}, i\sqrt{2}, -i\sqrt{2}\}$

20) $x^6 - 65x^3 + 64 = 0$

$\left\{4, -2 + 2i\sqrt{3}, -2 - 2i\sqrt{3}, 1, \frac{-1 + i\sqrt{3}}{2}, \frac{-1 - i\sqrt{3}}{2}\right\}$

21) $x^6 - 63x^3 - 64 = 0$

$\left\{4, -2 + 2i\sqrt{3}, -2 - 2i\sqrt{3}, -1, \frac{1 + i\sqrt{3}}{2}, \frac{1 - i\sqrt{3}}{2}\right\}$

22) $x^6 - 26x^3 - 27 = 0$

$\left\{-1, \frac{1 + i\sqrt{3}}{2}, \frac{1 - i\sqrt{3}}{2}, 3, \frac{-3 + 3i\sqrt{3}}{2}, \frac{-3 - 3i\sqrt{3}}{2}\right\}$

23) $x^8 - 32x^4 + 256 = 0$

$\{2 \text{ mult. } 2, -2 \text{ mult. } 2, 2i \text{ mult. } 2, -2i \text{ mult. } 2\}$

24) $x^8 - 8x^4 + 16 = 0$

$\{\sqrt{2} \text{ mult. } 2, -\sqrt{2} \text{ mult. } 2, i\sqrt{2} \text{ mult. } 2, -i\sqrt{2} \text{ mult. } 2\}$