

## HW #38 Example - Finding Zeros of a Polynomial Date \_\_\_\_\_ Period \_\_\_\_\_

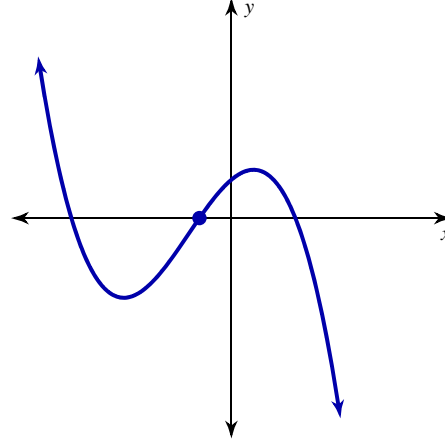
Find all zeros. One zero has been given.

1)  $f(x) = 2x^3 + x^2 - 5x + 2$ ;  $-2$

- A)  $\left\{\frac{1}{2}, \frac{1}{3}, -2\right\}$       B)  $\left\{0, \frac{1}{2}, -2\right\}$   
 C)  $\left\{\frac{1}{2}, 1, -1\right\}$       D)  $\left\{\frac{1}{2}, 1, -2\right\}$   
 E)  $\{0, 1, -2\}$

Using the given graph and one of the zeros, find the remaining solution(s).

2)  $x = -1$ ,  $f(x) = -x^3 - 4x^2 + 7x + 10$



State the possible rational zeros for each function.

3)  $f(x) = 3x^4 + 8x^2 + 4$

- A)  $\pm 1, \pm 3, \pm \frac{1}{2}, \pm \frac{3}{2}, \pm \frac{1}{4}, \pm \frac{3}{4}$   
 B)  $\pm 1, \pm 2, \pm 4$   
 C)  $\pm 1, \pm 2, \pm 4, \pm \frac{1}{3}, \pm \frac{2}{3}, \pm \frac{4}{3}$   
 D)  $\pm 1, \pm 2, \pm 3, \pm 6, \pm \frac{1}{2}, \pm \frac{3}{2}$   
 E)  $0, \pm 1, \pm 2, \pm 4$

Write a polynomial function of least degree with integral coefficients that has the given zeros.

4)  $-\frac{1}{4}, 1, -\frac{5}{4}$

- A)  $f(x) = 16x^3 + 8x^2 - 20x - 5$   
 B)  $f(x) = 16x^3 + 8x^2 - 26x - 5$   
 C)  $f(x) = 16x^3 + 8x^2 - 24x - 5$   
 D)  $f(x) = 16x^3 + 8x^2 - 19x - 5$   
 E)  $f(x) = 16x^3 + 15x^2 - 19x - 5$

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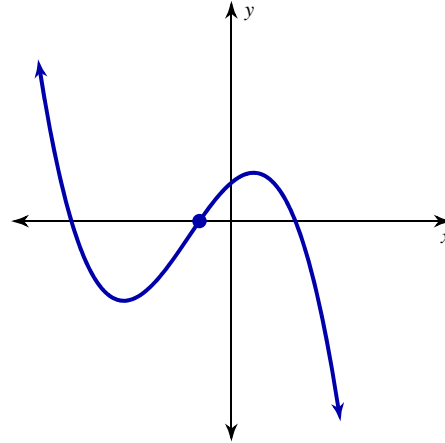
Find all zeros. One zero has been given.

1)  $f(x) = 2x^3 + x^2 - 5x + 2; -2$

- A)  $\left\{\frac{1}{2}, \frac{1}{3}, -2\right\}$       B)  $\left\{0, \frac{1}{2}, -2\right\}$   
 C)  $\left\{\frac{1}{2}, 1, -1\right\}$       \*D)  $\left\{\frac{1}{2}, 1, -2\right\}$   
 E)  $\{0, 1, -2\}$

Using the given graph and one of the zeros, find the remaining solution(s).

2)  $x = -1, f(x) = -x^3 - 4x^2 + 7x + 10$



$x = -4, x = 2$

State the possible rational zeros for each function.

3)  $f(x) = 3x^4 + 8x^2 + 4$

- A)  $\pm 1, \pm 3, \pm \frac{1}{2}, \pm \frac{3}{2}, \pm \frac{1}{4}, \pm \frac{3}{4}$   
 B)  $\pm 1, \pm 2, \pm 4$   
 \*C)  $\pm 1, \pm 2, \pm 4, \pm \frac{1}{3}, \pm \frac{2}{3}, \pm \frac{4}{3}$   
 D)  $\pm 1, \pm 2, \pm 3, \pm 6, \pm \frac{1}{2}, \pm \frac{3}{2}$   
 E)  $0, \pm 1, \pm 2, \pm 4$

Write a polynomial function of least degree with integral coefficients that has the given zeros.

4)  $-\frac{1}{4}, 1, -\frac{5}{4}$

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