Algebra 2: Happy New Year!!!

Cumulative Review: Show all of your wor

Solve each equation.

1) $108 = -9(n - 2)$

$\{-10\}$

Find the value of the discriminant of each quadratic

3) $6m^2 + 3m + 7 = 7$

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Solve each equation with the quadratic formula.

4) $2n^2 + 9n - 68 = 0$ $\left\{4, -\frac{17}{2}\right\}$

Determine the x intercepts of the following

6) $f(x) = (3x + 9)(x - 6)(x + 8)$

-8,-3, 6

Determine the y-intercept

7) $f(x) = (3x - 2)(x - 3)^2$

-18

Evaluate.

8) $f(n) = n^4 - 26n^3 + 167n^2 - 36n + 174$ at $n = 11$

20

9) $f(a) = a^3 - a^2 - 120a - 130$ at $a = 12$

14

Evaluate by synthetic substitution.

10) $f(a) = a^4 - 4a^3 + 11a^2 - 17a - 11$ at $a = 2$

-17

How many solutions does the equation have?

11) $f(x) = x^5 - 14x^3 + 48x$

5

Find all zeros.

12) $f(x) = x^3 + 13x^2 - x - 13$

$\{1, -13, -1\}$

Find all roots.

14) $x^3 - 3x^2 - x + 3 = 0$

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

Make a list of possible rational zeros for the followin

16) $f(x) = x^3 + 3x^2 - 5x - 15$

$\pm 1, \pm 3, \pm 5, \pm 15$

Find the inverse of each function.

17) $g(n) = 1 - n^3$ $g^{-1}(n) = \sqrt[3]{-n + 1}$

State if the given functions are inverses.

19) $h(x) = \dfrac{-4x - 2}{3}$

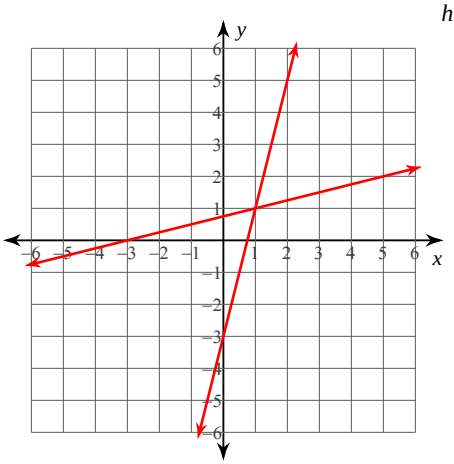
$f(x) = x - 1$

No

Find the inverse of each function. Then graph the fu

21) $h(x) = 4x - 3$

$h^{-1}(x) = \frac{1}{4}x + \frac{3}{4}$



Evaluate each function.

22) $f(x) = x^3 + 3x$; Find $f(4)$

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Perform the indicated operation.

24) $h(n) = -3n - 4$

$g(n) = n^2 + 5$

Find $h(n) \cdot g(n)$

$-3n^3 - 4n^2 - 15n - 20$

Perform the indicated operation. Substitute wisely.

26) $g(n) = 4n + 3$

$f(n) = n^2 - 5n$

Find $g(f(n))$

$4n^2 - 20n + 3$

Bonus: Write a polynomial function of least degree w

28) $-5,\ 2i$

$f(x) = x^3 + 5x^2 + 4x + 20$