

Secondary III 2-3 HW  
Factoring Polynomials

Name: \_\_\_\_\_

Factor the polynomial, or identify it as irreducible.

1.  $x^3 + x^2 - 12x$

2.  $x^3 + 5$

3.  $x^3 - 125$

4.  $x^3 + 5x^2 + 6x$

5.  $8x^3 + 125$

6.  $2x^3 + 6x$

7.  $216x^3 + 64$

8.  $8x^3 - 64$

9.  $10x^3 - 80$

10.  $2x^4 + 7x^3 + 5x^2$

11.  $x^3 + 10x^2 + 16x$

12.  $x^3 + 9769$

Factoring Polynomials

Factor the polynomial by grouping.

13.  $x^3 + 8x^2 + 6x + 48$

14.  $x^3 + 4x^2 - x - 4$

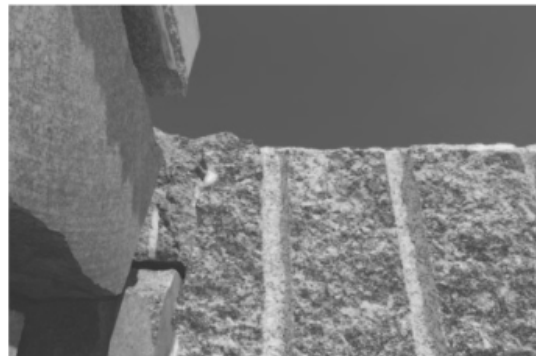
15.  $8x^4 + 8x^3 + 27x + 27$

16.  $27x^4 + 54x^3 - 64x - 128$

17.  $x^3 + 2x^2 + 3x + 6$

18.  $4x^4 - 4x^3 - x + 1$

22. **Construction** A piece of granite is being cut for a building foundation. You want its length to be 8 times its height and its width to be 3 times its height. If you want the granite to be 648 cubic yards, what will its length, width, and height be?



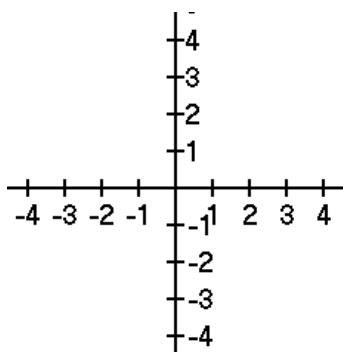
Review

Graph each function and state the domain and range

a.  $g(x) = 3(2)^{x-1}$

Domain:

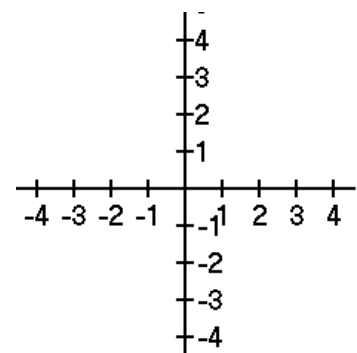
Range:



b.  $f(x) = -2\sqrt{x} + 3$

Domain:

Range:



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Answer Key:

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1.  $x(x-3)(x+4)$

7.  $8(3x+2)(9x^2-6x+4)$

9.  $10(x-2)(x^2+2x+4)$

13.  $(x^2+6)(x+8)$

15.  $(x+1)(2x+3)(4x^2-6x+9)$