

Day 65

6.1-6.3 QUIZ Review

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1. Write a polynomial function with at least 3 zeros that are negative, one of which has a multiplicity of 2.

$$y = (x+3)(x+10)(x+4)(x+4)$$

$$x = -3 \quad x = -10 \quad x = -4 \quad x = -4$$

$$y = (x+3)(x+10)(x+4)^2$$

- (ex) WAPF with zeros 5 and -2.

$$y = (x-5)(x+2) \quad \begin{array}{l} x=5 \\ x=-2 \end{array}$$

2 $-2x^3 + 6 - x^3 + 5x = \boxed{-3x^3 + 5x + 6}$

degree: cubic
terms: trinomial

(ex) $(2x-1)^2$
 $= (2x-1)(2x-1)$

$$\begin{array}{l} 4x^2 - 2x - 2x + 1 \\ 4x^2 - 4x + 1 \end{array}$$

quadratic
trinomial

(ex) $(5x-1) - (3-6x)$

Subtract

$$5x-1 - 3+6x = 11x-4$$

linear binomial

5) determine zeros + multiplicity

$$y = (x-2)^2(x-1)$$

$$x-2=0 \quad x-1=0$$

$$x=2 \quad x=1$$

zeros: 2 (mult. 2), 1

6) $y = (2x+1)(x-4)$

$$2x+1=0$$

$$-1 \quad -1$$

$$2x = -\frac{1}{2}$$

$$x=4$$

zeros: $-\frac{1}{2}, 4$

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Cubic regression

X'S L_1

Y'S L_2

Factoring

Name _____

Factor each polynomial completely. Write prime if it is not factorable.

1.) $24x^2 - 8x$ _____ 2.) $10x^2 + 35x$ _____

3.) $12x^2 - 9x + 15$ _____ 4.) $3n^3 - 12n^2 - 30n$ _____

5.) $2x^3 - 3x^2 + 5x$ _____ 6.) $17x^2 + 34x + 51$ _____

7.) $18m^2n^4 - 12m^2n^3 + 24m^2n^2$ _____

8.) $3x + 6$ _____

9.) $4a - 12$ _____

10.) $a^3 - 4a$ _____

11.) $36y^4 + 24y^2$ _____

12.) $y^2 - 144$ _____

13.) $2x^2 + 16x + 32$ _____

14.) $x^2 - 64$ _____

15.) $x^2 + 3x - 4$ _____

16.) $x^2 - 5x + 6$ _____

17.) $x^2 + 3x - 18$ _____

18.) $x^2 - 16x - 36$ _____

19.) $x^2 + 13x + 22$ _____

13.) $2x^2 - x - 6$ _____

21.) $3x^2 + 11x + 10$ _____

15.) $2x^2 - x - 21$ _____

23.) $6x^2 + 5x - 4$ _____

17.) $6x^2 - 10x + 4$ _____

25.) $7x^2 + 42x + 63$ _____

19.) $4x^2 - 49$ _____

27.) $3x^2 - 108$ _____

21.) $4x^2 - 32x + 60$ _____

29.) $3x^2 + 21x + 30$ _____

30.) $x^2 - 25$ _____

31.) $b^2 - 9$ _____

32.) $4y^2 - 81$ _____

33.) $100 - 169x^2$ _____

34.) $x^2 + 8x + 16$ _____

35.) $y^2 - 12y + 36$ _____

36.) $x^2 + 16x + 64$ _____

37.) $16x^2 - 24x + 9$ _____

38.) $4x^2 - 30x + 25$ _____

39.) $x^2 + 9x + 14$ _____

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360
(6-15, 20,
21, 24,
25)

Factoring

Name _____

40.) $x^2 - 4x + 3$ () ()

41.) $x^2 - 2x + 24$ _____

42.) $x^2 - 2x - 8$ _____

43.) $3x^2 + 11x + 6$ $\frac{3 \cdot 6 = 18}{1}$ _____

44.) $2x^2 - 15x + 25$ _____

45.) $9x^2 - 1$ _____

46.) $x^3 - 64$ _____

47.) $8x^3 + 1$ _____

48.) $x^3 + 2x^2 + 4x + 8$ _____

50.) $2x^3 - 6x^2 + 3x - 9$ _____

51.) $3x^3 + 6x^2 - 2x - 4$ _____

52.) $x^4 - 16$ _____

53.) $x^4 + 2x^3 - 8x - 16$ _____

54.) $3x^3 - 3x^2 - 6x$ _____

Solve by factoring.

55.) $2x^2 = 6x$ _____

56.) $x^2 - 2x = 3$ _____

57.) $x^3 = 2x^2 + 8x$ _____

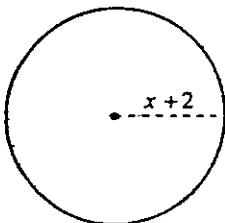
58.) $3x^2 + 5x = 2$ _____

59.) $x^3 + 3x^2 + 2x = -6$ _____

60.) $x^2 + x - 30 = 0$ _____

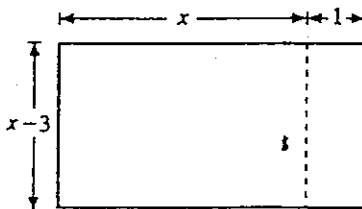
In 61-63 find the dimensions of the geometric shape.

61.



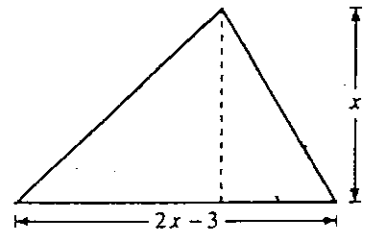
Area = $144\pi \text{ cm}^2$

62.



Area = 60 in^2

63.



Area = 27 in^2