

39 problems

Review #10 worth 2 points

### Algebra 2 Assignment 28

**NEW** Page 68

35.  $g(x) = x^2 - x$      $g(3) = (3)^2 - 3 = 9 - 3 = \boxed{6}$

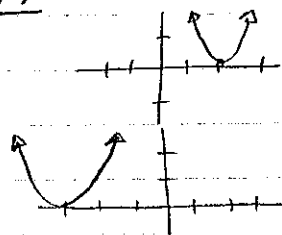
37.  $f(x) = 3x - 5$      $f(\frac{2}{3}) = 3(\frac{2}{3}) - 5 = 2 - 5 = \boxed{-3}$

39.  $g(x) = x^2 - x$      $g(5n) = (5n)^2 - (5n) = \boxed{25n^2 - 5n}$

41.  $h(x) = \frac{x^2 + 5x - 6}{x + 3}$      $h(-2) = \frac{(-2)^2 + 5(-2) - 6}{(-2) + 3} = \frac{4 - 10 - 6}{-2 + 3} = \frac{-12}{1} = \boxed{-12}$

Page 338 (using calculator)

9.  $g(x) = x^2 - 4x + 4$   
vertex:  $\boxed{(2, 0)}$

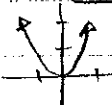


11.  $h(x) = x^2 + 6x + 9$   
vertex:  $\boxed{(-3, 0)}$

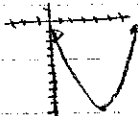
13.  $a^2 - 4a + 4 = 0$  (solve by graphing)  
 $\boxed{a = 2}$

23. Solve.  $x^2 + 8x + 16 = 0$      $\boxed{x = -4}$

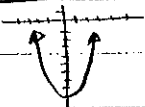
25.  $f(x) = x^2$   
vertex:  $\boxed{(0, 0)}$



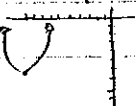
27.  $g(x) = x^2 - 9x + 9$   
vertex:  $\boxed{(4.5, -11.25)}$



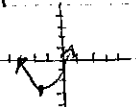
29.  $f(x) = x^2 - 9$   
vertex:  $\boxed{(0, -9)}$



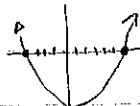
31.  $f(x) = x^2 + 20x + 93$   
vertex:  $\boxed{(-10, -7)}$



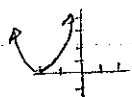
33.  $f(x) = x^2 + 3x - 0.95$   
vertex:  $\boxed{(-1.5, -3.2)}$



35. Solve:  $p^2 - 2p - 24 = 0$   
 $\boxed{p = 6, -4}$



37. Solve:  $c^2 + 4c + 4 = 0$   
 $\boxed{c = -2}$

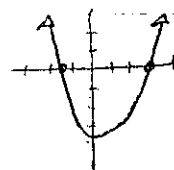


Assignment 28 - Continued

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39. Solve:  $2w^2 - 3w = 9$

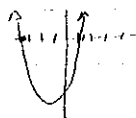
$w = -1.5, 3$



$2w^2 - 3w - 9 = 0$

41. Solve:  $2c^2 + 5c - 12 = 0$

$c = -4, 1.5$



REVIEW

1.  $\frac{15x^{-3}y^2z^{-4}}{315x^2y^5z^{-9}} = \frac{1}{3}x^{-3-2}y^{2-5}z^{-4+9} = \frac{1}{3}x^{-5}y^{-3}z^5 = \frac{z^5}{3x^5y^3}$

2.  $(3+\sqrt{2})(4+\sqrt{2}) = 12 + 3\sqrt{2} + 4\sqrt{2} + \sqrt{2}^2 = 14 + 7\sqrt{2}$

3.  $\frac{4}{2\sqrt{3}} = \frac{2 \cdot \sqrt{3}}{\sqrt{3} \cdot \sqrt{3}} = \frac{2\sqrt{3}}{\sqrt{3}^2} = \frac{2\sqrt{3}}{3}$

4.  $(4a^3b^4)^{3/2} = 4^{3/2}a^{9/2}b^{12/2} = \sqrt{4}^3a^{9/2}b^6 = 8a^{9/2}b^6$

5.  $x^{1/3}y^{3/4}z^{7/6} = x^{1/3 \cdot 4/4}y^{3/4 \cdot 3/3}z^{7/6 \cdot 2/2} = x^{4/12}y^{9/12}z^{14/12} = \sqrt[12]{x^4y^9z^{14}}$

6.  $(7+6i)(4-2i) = 28 - 14i + 24i - 12i^2 = 40 + 10i$

7.  $\frac{(8+5i) \cdot -i}{4i \cdot -i} = \frac{-8i - 5i^2}{-4i^2} = \frac{-8i + 5}{+4} = \frac{5-8i}{4}$

8.  $\frac{(2+i)(3+i)}{(3-i)(3+i)} = \frac{6+2i+3i+i^2}{9-i^2} = \frac{5+5i}{10} = \frac{5(1+i)}{5(2)} = \frac{1+i}{2}$

9.  $\frac{(3+2i)(5+3i)}{(5-3i)(5+3i)} = \frac{15+9i+10i+6i^2}{25-9i^2} = \frac{9+19i}{34}$

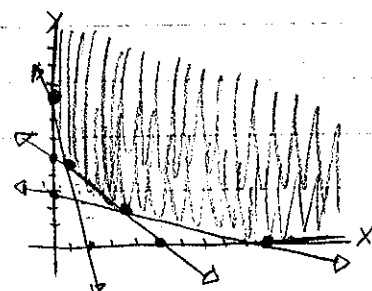
(2pts) 10.  $x = \#$  of bags of Food X  $y = \#$  of bags of food Y  
 Cost  $15x + 30y = f(x,y)$   $x \geq 0, y \geq 0$

nutr A  $8x + 2y \geq 16$   $x(2,0)$   
 $y(0,8)$

nutr B  $1x + 1y \geq 5$   $x(5,0)$   
 $y(0,5)$

nutr C  $2x + 7y \geq 20$   $x(10,0)$   
 $y(0,20/7)$

(x,y)	15x+30y
(10,0)	15(10)+30(0) = 150
(0,8)	15(0)+30(8) = 240
(1,4)	15(1)+30(4) = 135
(3,2)	15(3)+30(2) = 105



they must produce 3 bags of Brand X and 2 bags of Brand Y for a minimum cost of \$105.

Assignment 28 - continued

Solve on calculator:

11.  $-2(x^2 - 6x + 6) = 0$

$x = 1.268, 4.732$

12.  $x + \sqrt{31-9x} = 5$

$x + \sqrt{31-9x} - 5 = 0$

$x = -2, 3$

Find the zeros

13.  $y = x^4 + 2x^3 - 8x - 16$

$x = -2, 2$

14.  $y = .6x + .4(100-x) - 50$

$x = 50$

Book: p 315

30.  $i^{59}$

$$\begin{array}{r} 14R3 \\ 4 \overline{)59} \\ \underline{16} \\ 19 \end{array}$$

$i^{59} = i^3 = -i$

40.  $(8-5i) - (2+i) = 8-5i-2-i = 6-6i$

42.  $(2-4i) + (2+4i) = 2-4i+2+4i = 4$

58.  $(7-i)(4+2i)(5+2i) = (28+14i-4i-2i^2)(5+2i) = (30+10i)(5+2i) = 150+60i+50i+20i^2 = 130+110i$

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14.  $\sqrt{x} = 3^2 \rightarrow x = 9$

20.  $(\sqrt[4]{7+3z})^4 = 2^4 \rightarrow 7+3z = 16$

$$\begin{array}{r} 3z = 9 \\ \underline{3} \quad \underline{3} \end{array} \rightarrow z = 3$$

24.  $9 + \sqrt{4x+8} = 11 \rightarrow (\sqrt{4x+8})^2 = 2^2 \rightarrow 4x+8 = 4 \rightarrow 4x = -4 \rightarrow x = -1$

34.  $\sqrt{x-6} = (3+\sqrt{x})^2 \rightarrow x-6 = 9+6\sqrt{x}+x \rightarrow -15 = 6\sqrt{x} \rightarrow \sqrt{x} = -\frac{5}{2} \quad \emptyset$