Hilliard City Schools
GAC 2
Course Proficiency Study Guide

I. Course Proficiency Purpose:

The purpose of this study guide is to aid the students who wish to take the proficiency assessment for the credit flex option. Items that the student will be required to know for proficiency will be administered in a multiple choice test.

II. Description of the Assessment Format:

This test is in a multiple choice format of 91 questions. You **must** use a # 2 pencil because it is scantron based. You must bring your own calculator but a formula sheet and scrap paper will be provided for you. Each question is worth 1 point and your final grade will be based of number correct out of total questions.

III. Proficiency Content must include:

Equations Expressions & Inequalities:
- Solving Equations
- Solving Inequalities
- Absolutely Value Equations and Inequalities

Radical Expressions & Equations
- The Pythagorean Theorem
- Distance and Midpoint Formulas
- Simplifying Radicals
- Operations with Radical Expressions
- Solving Radical Equations
- Trigonometric Ratios

Polygons & Quadrilaterals
- The Polygon Angle-Sum Theorems
- Properties of Parallelograms
- Proving that a Quadrilateral is a Parallelogram
- Properties of Rhombuses, Rectangles & Squares
- Conditions for Rhombuses, Rectangles & Squares
- Trapezoids & Kites
- Polygons in the Coordinate Plane
- Applying Coordinate Geometry

- Proofs using Coordinate Geometry

Right Triangles & Trigonometry

- The Pythagorean Theorem and Its Converse
- Special Right Triangles
- Trigonometry
- Angles of Elevation & Depression

Area

- Areas of Parallelograms & Triangles
- Area of Trapezoids, Rhombuses & Kites
- Area of Regular Polygons
- Perimeters and Areas of Similar Figures
- Trigonometry & Area
- Circles & Arcs
- Area of Circles & Sectors

Functions Equations and Graphs

- Relations & Functions
- Direct Variation
- Standard Form
- Parallel and Perpendicular Lines
- Scatter Plots and Trend Lines
- Slope-Intercept Form
- Linear Equations
- Two-Variable Inequalities

Linear Systems

- Solving Systems using Tables & Graphs
- Solving Systems Algebraically
- Systems of Inequalities

Polynomials & Factoring

- Adding & Subtracting Polynomials
- Multiplying & Factoring
- Multiplying Binomials
- Multiplying Special Cases
- Factoring $x^2 + bx + c$
- Factoring $ax^2 + bx + c$
- Factoring Special Cases
- Factoring by Grouping

Quadratic Functions & Equations

- Quadratic Graphs
- Quadratic Functions
- Solving Quadratic Equations
- Factoring to Solve Quadratic Equations
- Completing the Square
- The Quadratic Formula & the Discriminant

Rational Expressions

- Simplifying Rational Expressions
- Multiplying & Dividing Rational Expressions
- Dividing Polynomials

IV. Suggested Resources:

Geometry and Algebra Connections 2 text book

Review Packet with answers (This review does not cover everything on the test.)

GAC 2 Name_____

Course Proficiency Review

Solve each equation.

1) $22 = 4p + 3(-2 + 8p)$

A) $\{1\}$ B) $\{6\}$
C) $\{-15\}$ D) $\{9\}$

2) $-7 + 7 - 8n - 3 = 3 - 6n$

A) $\{6\}$ B) $\{-15\}$
C) $\{-3\}$ D) $\{-10\}$

Solve each inequality.

3) $24 \geq -8m + 2m$

A) $m \geq -28$ B) $m \leq -28$
C) $m \geq -4$ D) $m \leq -36$

4) $-36 > -3(r + 5)$

A) $r > 7$ B) $r > -14$
C) $r > -34$ D) $r > 6$

Solve each compound inequality.

5) $-4b \geq 36$ or $b + 9 \geq 5$

A) $b < -6$ or $b \geq -5$ B) $b \leq 1$
C) $b \leq -9$ or $b \geq -4$ D) $b < -6$

6) $\frac{v}{4} > -1$ and $v + 1 < 10$

A) $v \leq 8$ B) $-5 \leq v < -4$
C) $-4 < v < 9$ D) $v < -4$

Solve each equation.

7) $|3 - 5n| = 47$

A) $\left\{-\frac{83}{7}, 9\right\}$ B) $\left\{-6, \frac{68}{9}\right\}$
C) $\left\{-6, \frac{14}{5}\right\}$ D) $\left\{-\frac{44}{5}, 10\right\}$

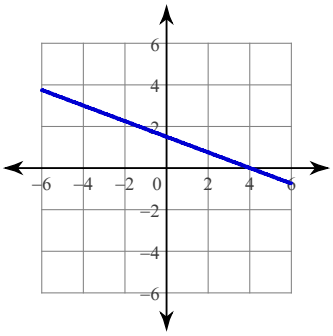
8) $|7 - 5k| - 10 = 42$

A) $\left\{-9, \frac{59}{5}\right\}$ B) $\{-9\}$
C) $\left\{\frac{1}{3}\right\}$ D) $\left\{\frac{1}{3}, -\frac{5}{3}\right\}$

Sketch the graph of each line.

9) $y = -\frac{8}{3}x + 4$

A)



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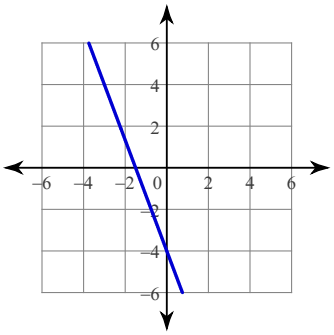

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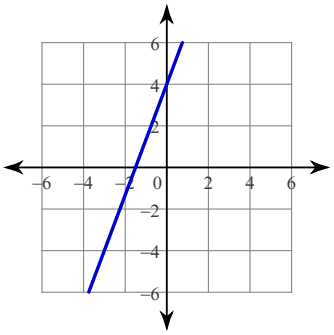

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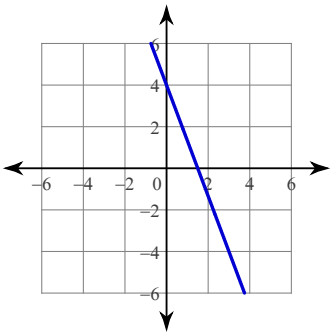
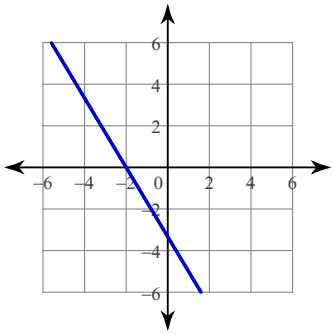


10) $3x + 5y = -10$

A)



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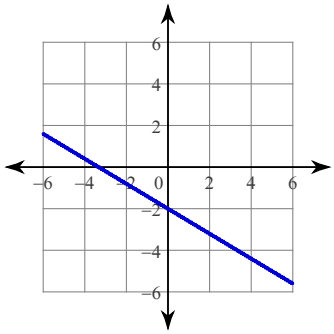

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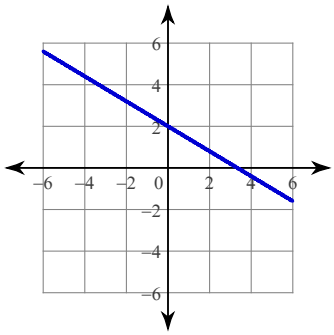

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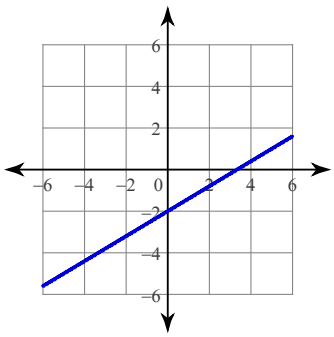


Write the slope-intercept form of the equation of each line given the slope and y-intercept.

11) Slope = $\frac{1}{5}$, y-intercept = -1

A) $y = x - \frac{1}{5}$

B) $y = \frac{1}{5}x - 1$

C) $y = -x - \frac{1}{5}$

D) $y = -\frac{1}{5}x - 1$

Write the slope-intercept form of the equation of each line.

12) $x - y = -2$

A) $y = -2x + 5$ B) $y = x + 2$

C) $y = 5x + 2$ D) $y = 2x + 5$

13) $y - 2 = -\frac{1}{3}(x + 5)$

A) $y = -\frac{4}{3}x - \frac{1}{3}$

B) $y = \frac{1}{3}x - \frac{1}{3}$

C) $y = -\frac{1}{3}x + \frac{1}{3}$

D) $y = \frac{4}{3}x - \frac{1}{3}$

Write the slope-intercept form of the equation of the line through the given point with the given slope.

14) through: $(5, -4)$, slope = -6

A) $y = 2x + 26$

B) $y = -2x + 26$

C) $y = -6x + 26$

D) $y = 6x + 26$

15) through: $(5, 4)$, slope = $\frac{2}{5}$

A) $y = \frac{2}{5}x + 2$ B) $y = \frac{4}{5}x + 2$

C) $y = x + \frac{4}{5}$ D) $y = 2x + \frac{4}{5}$

Write the slope-intercept form of the equation of the line through the given points.

16) through: $(2, -3)$ and $(0, 3)$

A) $y = 3x - 3$

B) $y = -3x - 4$

C) $y = -3x + 3$

D) $y = -4x - 3$

17) through: $(0, 4)$ and $(3, 5)$

A) $y = \frac{1}{3}x + 4$

B) $y = 4x + \frac{1}{3}$

C) $y = -4x + \frac{1}{3}$

D) $y = \frac{1}{3}x + \frac{1}{3}$

Write the slope-intercept form of the equation of the line described.

18) through: $(-5, -1)$, parallel to $y = x + 4$

A) $y = -x + 4$ B) $y = x + 4$
C) $y = -5x - 1$ D) $y = 4x - 1$

19) through: $(2, 5)$, parallel to $y = 5x + 4$

A) $y = 5x + 5$ B) $y = -5x - 5$
C) $y = -5x + 5$ D) $y = 5x - 5$

20) through: $(2, 5)$, perp. to $y = -\frac{1}{5}x + 3$

A) $y = -5x - 5$ B) $y = 5x - 5$
C) $y = -5x - 2$ D) $y = -2x - 5$

21) through: $(-3, -1)$, perp. to $y = x + 4$

A) $y = -x - 4$ B) $y = -4x + 1$
C) $y = x - 4$ D) $y = 4x + 1$

Write the standard form of the equation of each line.

22) $-10y = 40 - 18x$

A) $5x - 10y = -9$
B) $9x - 5y = 20$
C) $9x - 5y = -20$
D) $5x - 10y = 9$

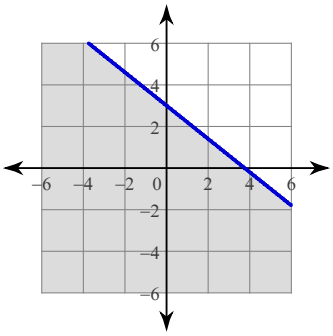
23) $\frac{2}{5}y = x - \frac{6}{5}$

A) $6x - 2y = 5$
B) $6x - 2y = -5$
C) $6x + 2y = -5$
D) $5x - 2y = 6$

Sketch the graph of each linear inequality.

24) $y \leq -\frac{4}{5}x + 3$

A)



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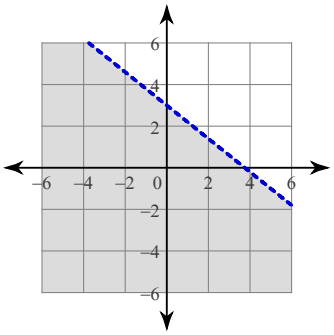

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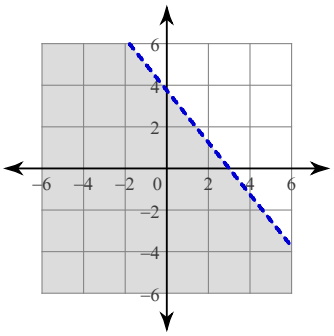

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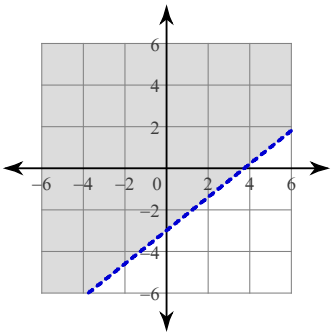
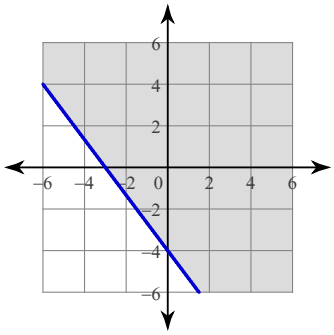


25) $4x + 3y > -12$

A)



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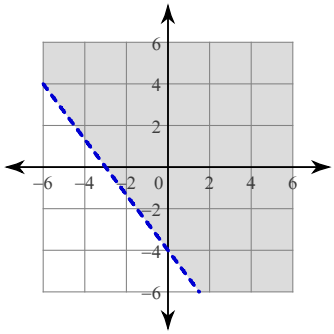

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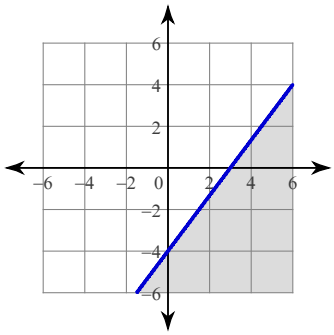

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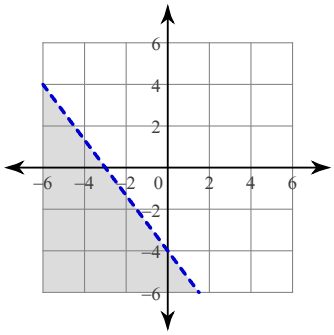


Simplify.

26) $\sqrt{27b^3}$

27) $\sqrt{320n^3}$

28) $-3\sqrt{12b^3} \cdot 5\sqrt{15b^2}$

A) $-90b^2\sqrt{5b}$ B) $6\sqrt{5}$
C) $3\sqrt{3}$ D) 180

29) $\sqrt{5v} \cdot -5\sqrt{20v^3}$

A) $-50v^2$ B) 10
C) 100 D) 5

30) $\sqrt{3}\left(\sqrt{3n} + 5\right)$

A) $8n$
B) $3\sqrt{n} + 5\sqrt{3}$
C) $4\sqrt{5n} + \sqrt{30}$
D) $-5\sqrt{30n} + 4n$

31) $-2\sqrt{15}\left(\sqrt{10x} + \sqrt{3}\right)$

A) $3x\sqrt{5x} + 30\sqrt{x}$
B) $10x\sqrt{x} + 2x$
C) $10x\sqrt{3x} + 25x\sqrt{5}$
D) $-10\sqrt{6x} - 6\sqrt{5}$

32) $\left(4 + \sqrt{2}\right)\left(-3 + \sqrt{2}\right)$

A) -10 B) $\sqrt{30} + 5\sqrt{5}$
C) $6\sqrt{2}$ D) $-10 + \sqrt{2}$

33) $\left(\sqrt{3} + 5\right)\left(\sqrt{3} - 3\right)$

A) $2\sqrt{3} + 5$ B) -12
C) $-12 + 2\sqrt{3}$ D) $8 + 2\sqrt{15}$

34) $-3\sqrt{20} - 3\sqrt{45} - 2\sqrt{5}$

35) $2\sqrt{3} - 2\sqrt{3} + 2\sqrt{3}$

Solve each equation. Remember to check for extraneous solutions.

36) $19 = \sqrt{x + 8} + 9$

A) $\{-92\}$ B) $\{5\}$
C) $\{92\}$ D) $\{-6\}$

37) $\sqrt{m + 8} = \sqrt{3m + 18}$

A) $\{1\}$ B) $\{-2\}$
C) $\{-5\}$ D) $\{-2, 5\}$

38) $\sqrt{n + 6} + 7 = 10$

A) $\{-3\}$ B) $\{3\}$
C) $\{-9\}$ D) $\{-9, -3\}$

39) $\sqrt{42 - x} = x$

A) $\{-9, -7\}$ B) $\{9, -7\}$
C) $\{6\}$ D) $\{-9, 7\}$

Solve each system by graphing.

40) $y = -\frac{7}{4}x - 3$

$y = -\frac{1}{4}x + 3$

A) $(4, 4)$ B) $(3, -4)$
C) $(-4, 3)$ D) $(-4, 4)$

41) $y = -x - 3$

$y = 3x + 1$

A) $(1, -2)$ B) $(1, 2)$
C) $(-1, -2)$ D) $(-1, 2)$

Solve each system algebraically.

42) $y = 0$

$-x - 8y = 8$

A) $(-8, 0)$ B) $(0, -8)$
C) No solution D) $(0, 8)$

43) $6x - 8y = 16$

$2x + y = -13$

A) $(4, 1)$ B) $(-1, 4)$
C) $(-4, -5)$ D) $(4, -1)$

44) $x + y = 1$

$-2x - 2y = -2$

A) $(6, -7)$
B) $(6, 1)$
C) Infinite number of solutions
D) $(-6, -7)$

45) $-2x + 2y = 2$

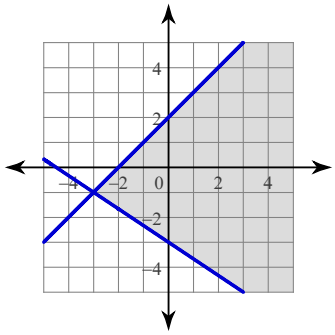
$-x + y = 5$

A) $(-5, -8)$
B) Infinite number of solutions
C) $(5, -8)$
D) No solution

Sketch the solution to each system of inequalities.

46) $y < 2x + 3$
$y \leq -2x - 1$

A)



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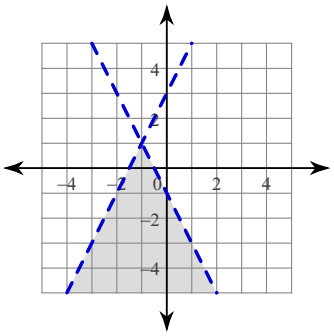

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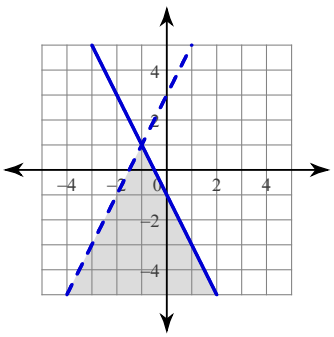

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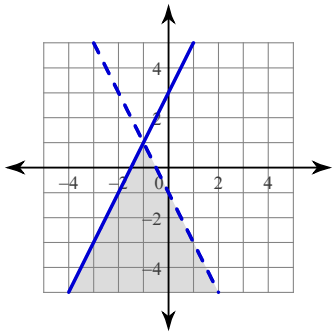
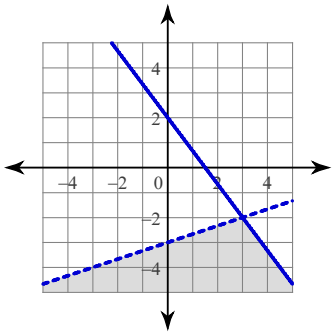


47) $y \leq -\frac{4}{3}x + 2$
$y < \frac{1}{3}x - 3$

A)



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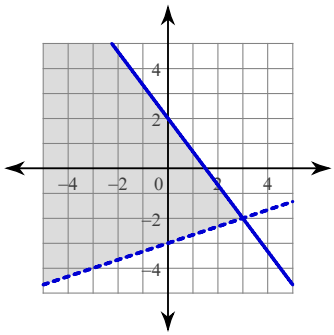

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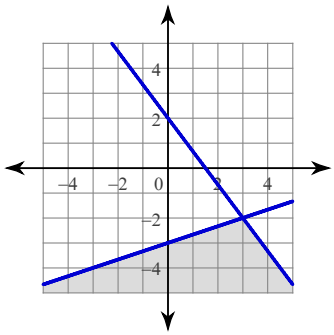

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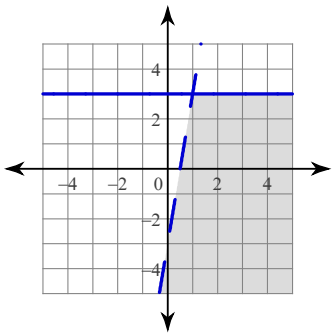
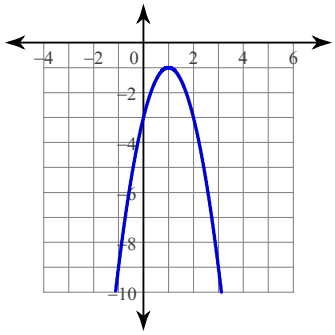


Sketch the graph of each function.

48) $y = -x^2 + 4x - 8$

A)



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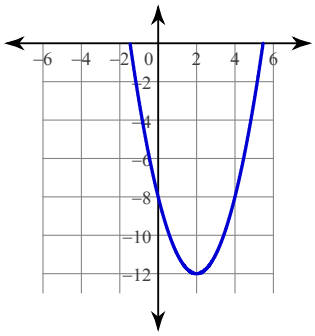

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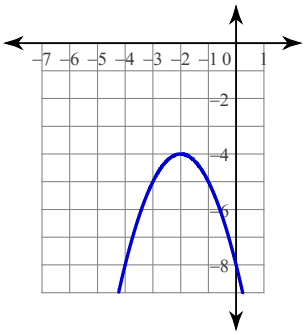

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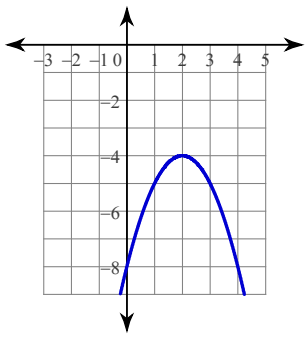
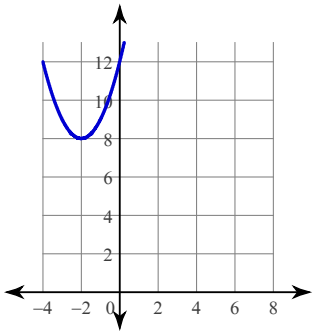


49) $y = x^2 + 2x - 2$

A)



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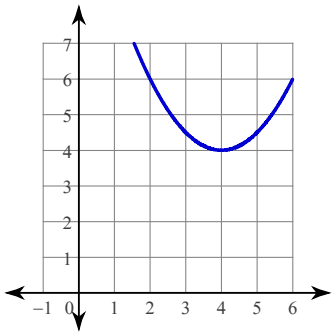

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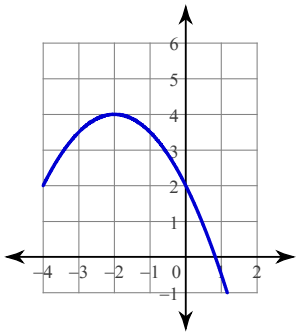

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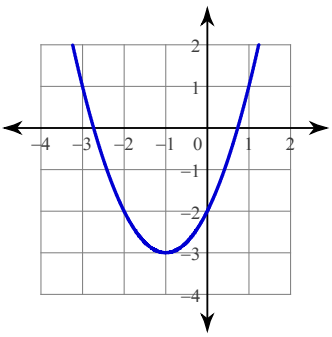


Factor each completely.

50) $4n^4 + 20n^3 - 56n^2$

A) $4n^2(n + 2)(n - 7)$
B) $4n^2(n + 7)(n - 2)$
C) $4n^2(n + 7)(n + 2)$
D) Not factorable

51) $n^2 + 6n + 8$

A) $(n + 4)(n + 2)$
B) $(n + 4)(n - 2)$
C) Not factorable
D) $(n - 4)(n + 2)$

52) $4k^2 - 40k$

A) $4k(k - 10)$
B) $4k(k + 10)$
C) $6(k - 5)(k - 1)$
D) $4k(k + 1)$

53) $5x^2 - 35x$

A) $x(x - 7)$
B) $5x(x + 7)$
C) $5x(x + 1)$
D) $5x(x - 7)$

54) $16k^2 - 1$

A) $(k - 4)^2$
B) $(4k - 1)^2$
C) $(4k + 1)(4k - 1)$
D) Not factorable

55) $n^2 + 10n + 25$

A) $(n + 25)^2$
B) $(4n + 5)(4n - 5)$
C) $(n - 5)(n + 5)$
D) $(n + 5)^2$

Solve each equation by taking square roots.

56) $16x^2 + 5 = 86$

A) $\left\{\frac{91}{16}, -\frac{91}{16}\right\}$
B) $\left\{\frac{9}{4}\right\}$
C) $\left\{\frac{9}{4}, -\frac{9}{4}\right\}$
D) $\{2, -2\}$

57) $10p^2 + 7 = 497$

A) $\{7\}$
B) $\left\{\frac{6\sqrt{35}}{5}, -\frac{6\sqrt{35}}{5}\right\}$
C) $\left\{\frac{252}{5}, -\frac{252}{5}\right\}$
D) $\{7, -7\}$

Solve each equation by factoring.

58) $n^2 + 25 = 10n$

A) $\{-7, -1\}$
B) $\{5\}$
C) $\{1\}$
D) $\{-6, 0\}$

59) $m^2 - 3 = -2m$

A) $\{-1, 3\}$
B) $\{-6, -7\}$
C) $\{1, -3\}$
D) $\{-5, 0\}$

60) $r^2 + 7r = -12$

A) $\{-4, -3\}$
B) $\{1, -3\}$
C) $\{4, 3\}$
D) $\{3, -3\}$

61) $x^2 - 2 = -x$

A) $\{8, -6\}$
B) $\{6, 0\}$
C) $\{1, -2\}$
D) $\{-3, -2\}$

Find the value that completes the square and then rewrite as a perfect square.

62) $x^2 - \frac{4}{7}x + \_\_$

63) $m^2 - 36m + \_\_$

64) $p^2 + 15p + \_\_$

65) $r^2 + 22r + \_\_$

Solve each equation by completing the square.

66) $a^2 + 16a - 3 = 0$

A) $\{15, 1\}$
B) $\{2, -12\}$
C) $\{0.185, -16.185\}$
D) $\{5, 1\}$

67) $x^2 - 10x - 38 = 0$

A) $\{12.937, -2.937\}$
B) $\{16.124, -0.124\}$
C) $\{8.243, -0.243\}$
D) $\{1.243, -7.243\}$

Solve each equation with the quadratic formula.

68) $2k^2 + 3k + 1 = 0$

A) $\{1.5, -3\}$ B) $\{5, -2\}$
C) $\{2, -5\}$ D) $\{-0.5, -1\}$

69) $p^2 - 5p + 6 = 0$

A) $\{3, 2\}$ B) $\{1, -2\}$
C) $\{-2\}$ D) $\{0.828, -4.828\}$

Find the discriminant of each quadratic equation then state the number and type of solutions.

70) $-4n^2 - 8n - 6 = -2$

A) 144; two real solutions
B) 128; two real solutions
C) 0; two real solutions
D) 0; one real solution

71) $-4x^2 + 3x = -10$

A) 49; one real solution
B) –20; two imaginary solutions
C) 49; two imaginary solutions
D) 169; two real solutions

Name each polynomial by degree and number of terms.

72) $-10m + 7$

A) fourth degree trinomial
B) linear monomial
C) quadratic monomial
D) linear binomial

73) $4n^2 - 2n + 10$

A) quadratic monomial
B) quadratic trinomial
C) fifth degree binomial
D) cubic binomial

Simplify each expression.

74) $(5m + m^3 - 8) + (5m + 5 + m^3)$

A) $2m^3 + 8m - 10$
B) $2m^3 + 8m - 18$
C) $2m^3 + 8m - 3$
D) $2m^3 + 10m - 3$

75) $(2a + 4a^2 + 4a^3) + (a^2 + a^3 + a^4)$

A) $-a^3 - 2a^2 + 2a$
B) $a^4 + 5a^3 + 5a^2 + 2a$
C) $-a^3 + 5a^2 + 2a$
D) $a^4 - a^3 + 5a^2 + 2a$

Find each product.

76) $(3k - 7)(4k + 7)$

77) $(a - 4)(6a + 4)$

78) $(5x + 1)^2$

79) $(6x - 2)(6x + 2)$

Factor each completely.

80) $15k^3 - 10k^2 - 6k + 4$

81) $9n^3 - 12n^2 + 3n - 4$

Divide.

82) $(4p^3 + 6p^2 - 12p - 13) \div (p + 2)$

A) $4p^2 - 4p - 10 + \frac{5}{p + 2}$
B) $4p^2 - 2p - 8 + \frac{3}{p + 2}$
C) $4p^2 - 4p - 8 + \frac{7}{p + 2}$
D) $4p^2 - 2p - 10 + \frac{3}{p + 2}$

83) $(x^3 + x^2 - 100x - 110) \div (x + 10)$

A) $x^2 - 9x - 10 - \frac{5}{x + 10}$
B) $x^2 - 9x - 10 - \frac{6}{x + 10}$
C) $x^2 - 9x - 11 - \frac{9}{x + 10}$
D) $x^2 - 9x - 10 - \frac{10}{x + 10}$

Simplify each and state the excluded values.

84) $\dfrac{18m}{15m^2 - 21m}$

A) $\dfrac{5m - 7}{6}$; $\{0\}$

B) 7 ; $\{-4\}$

C) $\dfrac{1}{7}$; $\{-4\}$

D) $\dfrac{6}{5m - 7}$; $\left\{0, \dfrac{7}{5}\right\}$

85) $\dfrac{n - 5}{n^2 - 11n + 30}$

A) 4 ; $\{-4\}$

B) $\dfrac{1}{n - 6}$; $\{5, 6\}$

C) $\dfrac{7n}{2n - 5}$; $\left\{\dfrac{5}{2}\right\}$

D) $n - 6$; $\{5\}$

Simplify each expression.

86) $\dfrac{10x^2 + 70x}{x + 7} \cdot \dfrac{1}{x - 7}$

A) $\dfrac{4x}{x + 6}$ B) $\dfrac{10x}{x - 7}$

C) $\dfrac{x - 5}{x + 6}$ D) $\dfrac{x - 4}{4}$

87) $\dfrac{r^2 - 8r + 12}{r + 4} \cdot \dfrac{1}{r - 2}$

A) $\dfrac{10}{r - 1}$ B) $\dfrac{r - 6}{r + 4}$

C) $r + 8$ D) $\dfrac{r + 4}{(r + 5)(r - 9)}$

Answers to Course Proficiency Review

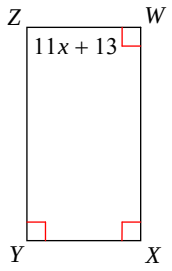
1) A
2) C
3) C
4) A
5) C
6) C
7) D
8) A
9) D
10) B
11) B
12) B
13) C
14) C
15) A
16) C
17) A
18) B
19) D
20) B
21) A
22) B
23) D
24) A
25) B
26) $3b\sqrt{3b}$
27) $8n\sqrt{5n}$
28) A
29) A
30) B
31) D
32) D
33) C
34) $-17\sqrt{5}$
35) $2\sqrt{3}$
36) C
37) C
38) B
39) C
40) D
41) C
42) A
43) C
44) C
45) D
46) C
47) A
48) D
49) D
50) B
51) A
52) A
53) D
54) C
55) D
56) C
57) D
58) B
59) C
60) A
61) C
62) $\frac{4}{49}$; $\left(x - \frac{2}{7}\right)^2$
63) 324; $(m - 18)^2$
64) $\frac{225}{4}$; $\left(p + \frac{15}{2}\right)^2$
65) 121; $(r + 11)^2$
66) C
67) A
68) D
69) A
70) D
71) D
72) D
73) B
74) D
75) B
76) $12k^2 - 7k - 49$
77) $6a^2 - 20a - 16$
78) $25x^2 + 10x + 1$
79) $36x^2 - 4$
80) $(5k^2 - 2)(3k - 2)$
81) $(3n^2 + 1)(3n - 4)$
82) B
83) D
84) D
85) B
86) B
87) B

GAC 2 Name_____

Course Proficiency Review

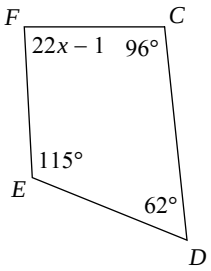
Solve for *x*.

1)



A) 6 B) 2
C) 7 D) 4

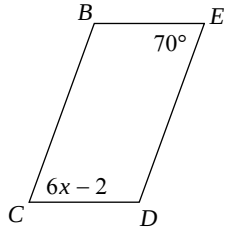
2)



A) 6 B) 0
C) 4 D) 8

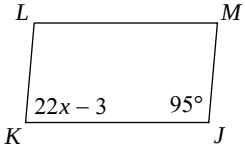
Solve for *x*. Each figure is a parallelogram.

3)



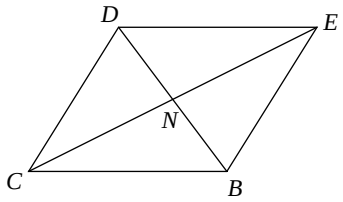
A) 9 B) 12
C) 2 D) 4

4)



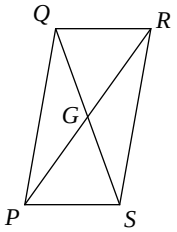
A) 4 B) 2
C) 5 D) 8

5) $CN = 18$
$NE = 4x - 6$



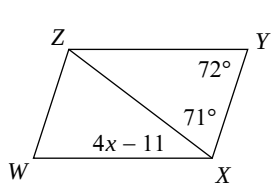
A) 7 B) 4
C) 8 D) 6

6) $QS = 36$
$GS = -6 + 3x$



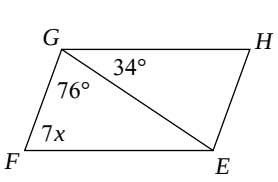
A) 10 B) 8
C) 12 D) 6

7)



A) 12 B) 10
C) 5 D) 6

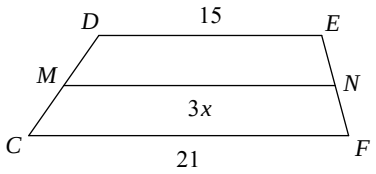
8)



A) 10 B) 6
C) 1 D) 11

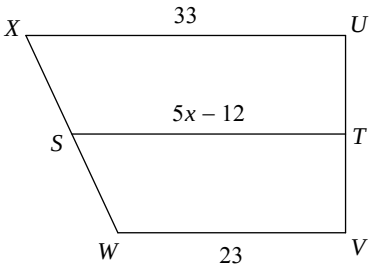
Solve for *x*. Each figure is a trapezoid.

9)



A) 6 B) 8
C) 0 D) 5

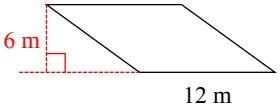
10)



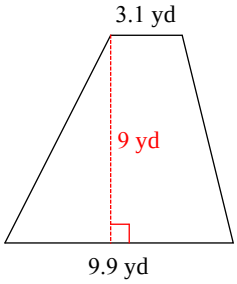
A) 2 B) 8
C) 7 D) 3

Find the area of each.

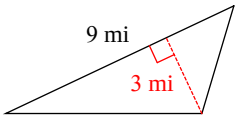
11)



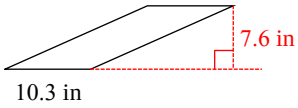
12)



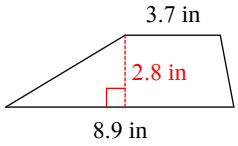
13)



14)

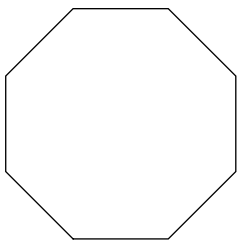


15)

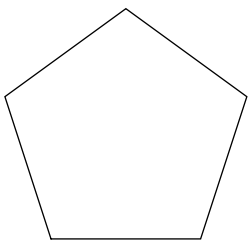


Find the measure of one interior angle in each polygon. Round your answer to the nearest tenth if necessary.

16)

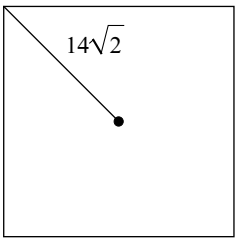


17)



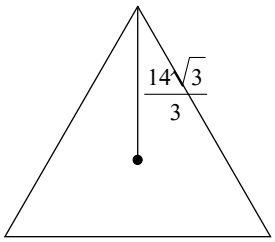
Find the area of each regular polygon. Round your answer to the nearest tenth if necessary.

18)



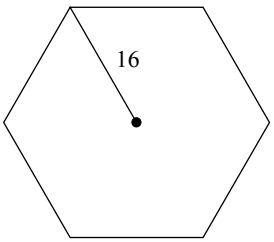
A) 256 B) 784
C) 588 D) 324

19)



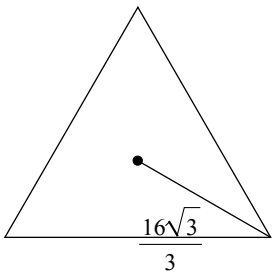
A) 878.1 B) 84.9
C) 129.9 D) 628.7

20)



A) 665.1 B) 509.2
C) 374.1 D) 93.5

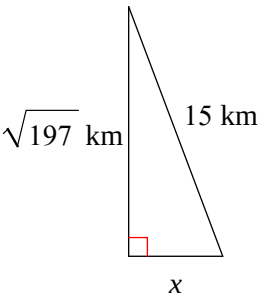
21)



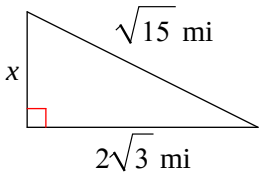
A) 62.4 B) 83.1
C) 1018.4 D) 110.9

Find the missing side of each triangle. Leave your answers in simplest radical form.

22)

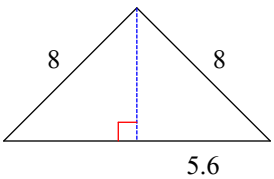


23)

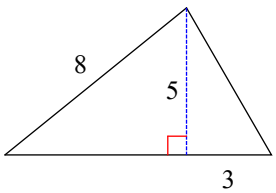


Find the area of each triangle. Round intermediate values to the nearest tenth. Use the rounded values to calculate the next value. Round your final answer to the nearest tenth.

24)

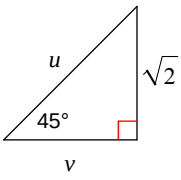


25)

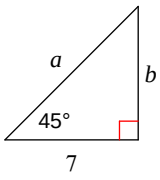


Find the missing side lengths. Leave your answers as radicals in simplest form.

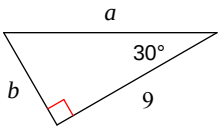
26)



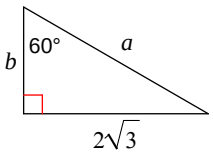
27)



28)

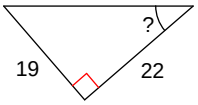


29)

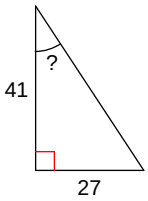


Find the measure of the indicated angle to the nearest degree.

30)

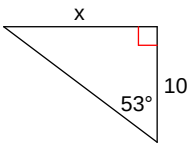


31)

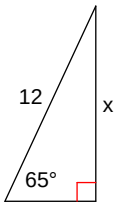


Find the missing side. Round to the nearest tenth.

32)

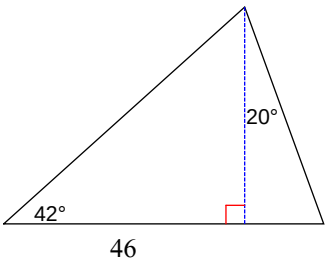


33)



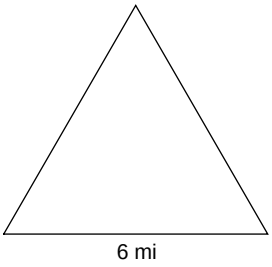
Find the area of each triangle. Round intermediate values to the nearest tenth. Use the rounded values to calculate the next value. Round your final answer to the nearest tenth.

34)

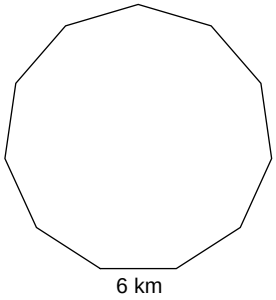


Find the area of each figure. Round your answer to the nearest tenth.

35)

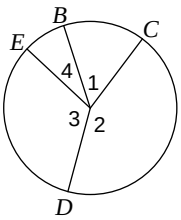


36)



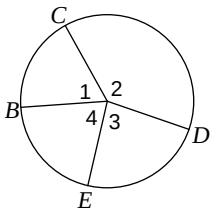
If an angle is given, name the arc it makes. If an arc is given, name its central angle.

37) $\overset{\frown}{BC}$



A) $\angle 1$ B) $\angle 2$
C) $\angle 4$ D) $\angle 3$

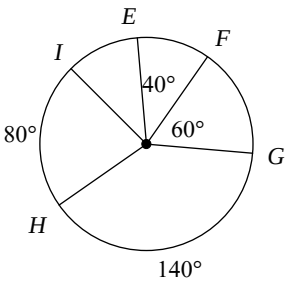
38) $\overset{\frown}{CD}$



A) $\angle 4$ B) $\angle 1$
C) $\angle 2$ D) $\angle 3$

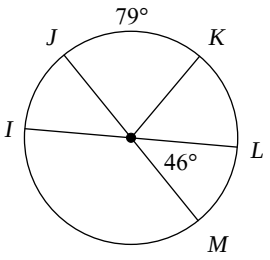
Find the measure of the arc or central angle indicated. Assume that lines which appear to be diameters are actual diameters.

39) $m\overset{\frown}{IF}$



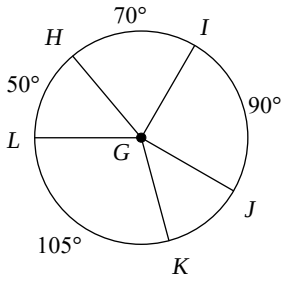
A) 75° B) 80°
C) 65° D) 140°

40) $m\overset{\frown}{IKM}$



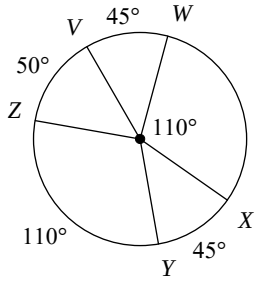
A) 135° B) 226°
C) 121° D) 50°

41) $m\angle IGK$



A) 144° B) 135°
C) 100° D) 61°

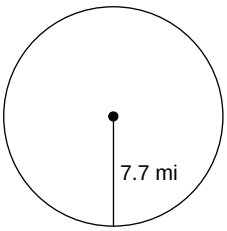
42) $m\overset{\frown}{ZWY}$



A) 48° B) 58°
C) 250° D) 144°

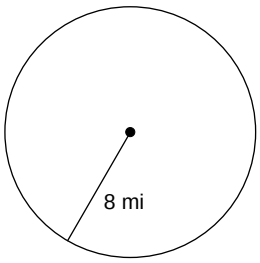
Find the circumference of each circle. Use your calculator's value of π. Round your answer to the nearest tenth.

43)



A) 55.3 mi B) 27.7 mi
C) 49 mi D) 48.4 mi

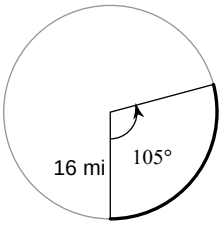
44)



A) 50.9 mi B) 56.6 mi
C) 50.3 mi D) 113.2 mi

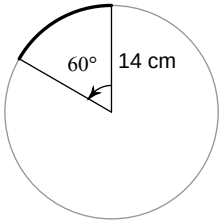
Find the length of each arc.

45)



A) $\frac{28\pi}{3}$ mi B) 15π mi
C) $\frac{224\pi}{3}$ mi D) $\frac{275\pi}{6}$ mi

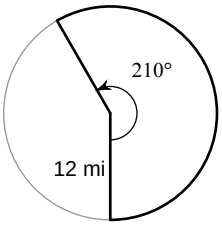
46)



A) $\frac{221\pi}{12}$ cm B) $\frac{98\pi}{3}$ cm
C) 11760π cm D) $\frac{14\pi}{3}$ cm

Find the area of each sector.

47)



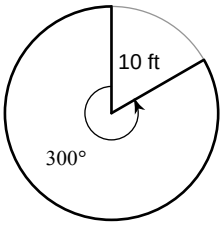
A) 40π mi²

B) $\frac{15\pi}{4}$ mi²

C) $\frac{825\pi}{8}$ mi²

D) 84π mi²

48)



A) $\frac{250\pi}{3}$ ft²

B) $\frac{605\pi}{8}$ ft²

C) $\frac{800\pi}{3}$ ft²

D) 20π ft²

Answers to Course Proficiency Review

1) C
2) C
3) B
4) A
5) D
6) B
7) A
8) A
9) A
10) B
11) 72 m²
12) 58.5 yd²
13) 13.5 mi²
14) 78.28 in²
15) 17.64 in²
16) 135°
17) 108°
18) B
19) B
20) A
21) D
22) $2\sqrt{7}$ km
23) $\sqrt{3}$ mi
24) 31.9
25) 23
26) $u = 2,\ v = \sqrt{2}$
27) $a = 7\sqrt{2},\ b = 7$
28) $a = 6\sqrt{3},\ b = 3\sqrt{3}$
29) $a = 4,\ b = 2$
30) 41°
31) 33°
32) 13.3
33) 10.9
34) 1264.8
35) 15.6 mi²
36) 337.2 km²
37) A
38) C
39) B
40) B
41) B
42) C
43) D
44) C
45) A
46) D
47) D
48) A