

A message from the Math Department

Mathematics is a subject that is cumulative in nature as it constructs new knowledge from foundational prior knowledge. Therefore, as it is imperative to our students' success, we require them to have mastered certain skills and concepts before entering a new math course.

Each course in the math department has provided suggested exercises for incoming students as a resource for them to review the required prerequisites that are critical to their success in the course. While we will not be requiring students to complete these exercises as a formal assignment to be turned in, we have the highest expectations of our students as self-in, we have the highest expectations of our students are self-in, we have the highest expectations of our students are self-in, we have the highest expectations of our students are self-in, we have the highest expectations of our students are self-in, we have the highest expectations of our students are self-in, we have the highest expectations of our students are self-in, we have the highest expectations of our students are self-in, we have the highest expectations are self-in, we have the highest expectations are s

We recommend that our students begin this process mid to late summer in order for everything to be fresh in their minds but also to give them time to recover from the school year they just completed. Rest is not an indulgence; it is a human necessity. We hope everyone has a safe, fun, and restful summer and we look forward to having another great school year when we come back in August!

Geometry Summer Packet

Complete each statement.

2. $0.77 \text{ m} = \mod (1 \text{ m} = 100 \text{ cm})$

4. 9 ft = \blacksquare in. (1ft = 12 in.)

5. $468 \text{ in.}^2 = \prod_{1}^{2} \text{ ft}^2$ (1 ft = 12 in.)

6. $7 \text{ ft}^3 = \text{ in.}^3 \quad (1 \text{ ft} = 12 \text{ in.})$

Simplify.

8. $(-7.8)^2$

9. $\left(\frac{10}{13}\right)^2$

10. 10^2

11. $(-18)^2$

13. $\sqrt{81}$

Solve. Round to the nearest tenth if necessary.

14.
$$11^2 + c^2 = 15^2$$

15.
$$x^2 = 41$$

16.
$$\sqrt{79}$$

Evaluate the expression for x = 2 and y = -4.

17.
$$(-x - y)^2$$

19.
$$\frac{x^2 - y}{x + 5y - 1}$$

20.
$$-3x + 2y$$

21. Evaluate the expression for
$$x = -2$$

 $2x^2 - 3$

Simplify the expression.

22.
$$(3m + 8)^2$$

23.
$$-4x - 6x - 1 - 5$$

24.
$$(2x + 2)(4x + 3)$$

Express each ratio in simplest form.

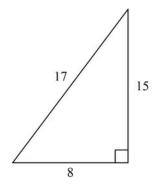
25.
$$\frac{4w^2}{22w}$$

$$26. \quad \frac{a+b}{4a+4b}$$

27.
$$60x^2 : 15x$$

Name: _____

28. shorter leg: hypotenuse



Drawing not to scale

Simplify each expression.

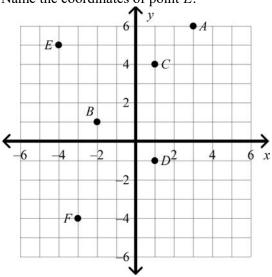
- 29. -3|9+3|
- 30. |-20-11|
- 31. |6| |-11|

Solve the equation.

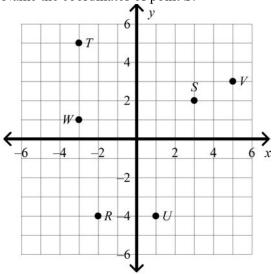
- 32. |x| + 1 = 9
- 33. |x| 10 = 17
- 34. |x| + 15 = 21
- 35. |x| = 41

Name:

36. Name the coordinates of point E.



37. Name the coordinates of point S.



- 38. Graph point A(3, 7).
- 39. Graph point A(-7, -1).
- 40. In which quadrant or on which axis would you find the point A(9, 1)?
- 41. In which quadrant or on which axis would you find the point B(10, -4)?
- 42. In which quadrant or on which axis would you find the point B(0, -8)?

Solve the equation.

43.
$$6(y+6) = 90$$

$$44. \quad \frac{2p}{3} - 15 = -19$$

45.
$$56 - 13 + 5g = 78$$

46.
$$16m = 272$$

47.
$$-2(q+8) = -10q$$

48.
$$7x - 7 = 3x + 9$$

49.
$$t - 115 = 10$$

- 50. Twice a number plus 18 is -16. What is the number?
- 51. The area of a rectangle is 3200 cm². If the length is twice as long as the width, what is the length of the rectangle?

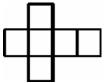
Write the percent as a decimal.

- 52. 73.1%
- 53. 29%
- 54. 55%

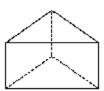
Simplify.

- 55. 32% of 214
- 56. What is 24% of 76? Estimate the answer.
- 57. What is 67% of 20? Estimate the answer.

58. Which three-dimensional figure matches this net?



A.



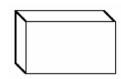
C.



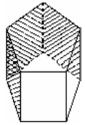
B.



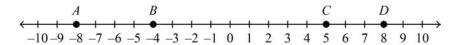
D.



59. What is a net for the figure below?



60. What is the length of \overline{AC} ?



61. If EF = 6 and EG = 21, find the value of FG. The drawing is not to scale.



62. If EF = 4x + 15, FG = 39, and EG = 110, find the value of x. The drawing is not to scale.



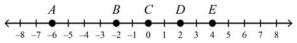
63. If EF = 2x - 12, FG = 3x - 15, and EG = 23, find the values of x, EF, and FG. The drawing is not to scale.



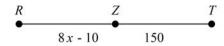
64. If EG = 25, and point F is 2/5 of the way between E and G, find the value FG. The drawing is not to scale.



65. What segment is congruent to \overline{AC} ?



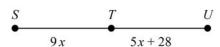
66. If Z is the midpoint of \overline{RT} , what are x, RZ, and RT?



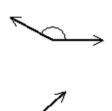
67. Which point is the midpoint of \overline{AE} ? (midpoint = middle point)

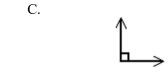


68. If T is the midpoint of \overline{SU} , what are ST, TU, and SU? (midpoint = middle point)



69. Which angle is a right angle?





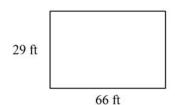
B.



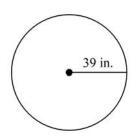
D.



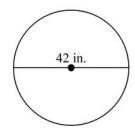
70. Find the perimeter of the rectangle. The drawing is not to scale.



71. Find the circumference of the circle in terms of π .



72. Find the area of the circle in terms of π .



73. The figure is formed from rectangles. Find the total area. The diagram is not to scale.

8 ft 2 ft 2 ft

Geometry Summer Packet Answer Section

1. ANS: 0.19 PTS: 1 DIF: L1 REF: 0-3 Measurement Conversions **OBJ:** Measurement Conversions TOP: Skills Handbook: Measurement Conversions KEY: metric units | conversion | measurement 2. ANS: 77 PTS: 1 DIF: L1 REF: 0-3 Measurement Conversions **OBJ:** Measurement Conversions TOP: Skills Handbook: Measurement Conversions KEY: metric units | length | conversion | measurement 3. ANS: 4.087 PTS: 1 DIF: L1 REF: 0-3 Measurement Conversions **OBJ:** Measurement Conversions TOP: Skills Handbook: Measurement Conversions KEY: metric units | capacity | conversion | measurement 4. ANS: 108 PTS: 1 DIF: L1 REF: 0-3 Measurement Conversions OBJ: Measurement Conversions TOP: Skills Handbook: Measurement Conversions KEY: measurement | conversion | length | customary units 5. ANS: PTS: 1 DIF: L2 REF: 0-3 Measurement Conversions **OBJ:** Measurement Conversions TOP: Skills Handbook: Measurement Conversions KEY: measurement | conversion | customary units 6. ANS: 12,096 PTS: 1 DIF: L2 REF: 0-3 Measurement Conversions TOP: Skills Handbook: Measurement Conversions **OBJ:** Measurement Conversions KEY: measurement | conversion | customary units 7. ANS: 440,000 PTS: 1 DIF: L2 REF: 0-3 Measurement Conversions TOP: Skills Handbook: Measurement Conversions **OBJ:** Measurement Conversions KEY: metric units | conversion | measurement

8.	ANS: 60.84	
9.	PTS: OBJ: TOP: KEY: ANS: 100 169	1 DIF: L2 REF: 0-6 Squaring Numbers and Finding Square Roots Squaring Numbers and Finding Square Roots Skills Handbook: Squaring Numbers and Finding Square Roots squaring numbers negative numbers real numbers
10.	TOP:	1 DIF: L2 REF: 0-6 Squaring Numbers and Finding Square Roots Squaring Numbers and Finding Square Roots Skills Handbook: Squaring Numbers and Finding Square Roots squaring numbers rational numbers
11.	KEY:	1 DIF: L1 REF: 0-6 Squaring Numbers and Finding Square Roots Squaring Numbers and Finding Square Roots Skills Handbook: Squaring Numbers and Finding Square Roots squaring numbers positive numbers
12.	TOP: KEY:	1 DIF: L2 REF: 0-6 Squaring Numbers and Finding Square Roots Squaring Numbers and Finding Square Roots Skills Handbook: Squaring Numbers and Finding Square Roots squaring numbers negative numbers
13.	TOP:	1 DIF: L2 REF: 0-6 Squaring Numbers and Finding Square Roots Squaring Numbers and Finding Square Roots Skills Handbook: Squaring Numbers and Finding Square Roots square root rational numbers
		1 DIF: L1 REF: 0-6 Squaring Numbers and Finding Square Roots Squaring Numbers and Finding Square Roots Skills Handbook: Squaring Numbers and Finding Square Roots square root rational numbers

14.	ANS: ±10.2	
15.	OBJ: TOP:	1 DIF: L2 REF: 0-6 Squaring Numbers and Finding Square Roots Squaring Numbers and Finding Square Roots Skills Handbook: Squaring Numbers and Finding Square Roots square root equation
16.	OBJ: TOP:	1 DIF: L2 REF: 0-6 Squaring Numbers and Finding Square Roots Squaring Numbers and Finding Square Roots Skills Handbook: Squaring Numbers and Finding Square Roots square root equation
17.	OBJ: TOP:	DIF: L2 REF: 0-6 Squaring Numbers and Finding Square Roots Squaring Numbers and Finding Square Roots Skills Handbook: Squaring Numbers and Finding Square Roots square root
18.	TOP:	DIF: L2 REF: 0-7 Evaluating and Simplifying Expressions Evaluating and Simplifying Expressions Skills Handbook: Evaluating and Simplifying Expressions evaluating expressions
19.	OBJ: TOP:	1 DIF: L1 REF: 0-7 Evaluating and Simplifying Expressions Evaluating and Simplifying Expressions Skills Handbook: Evaluating and Simplifying Expressions evaluating expressions
	OBJ: TOP:	1 DIF: L3 REF: 0-7 Evaluating and Simplifying Expressions Evaluating and Simplifying Expressions Skills Handbook: Evaluating and Simplifying Expressions evaluating expressions

20.	ANS: -14				
21.	TOP:	Evaluating and Si	F: L2 mplifying Express Evaluating and Sin sions	ions	0-7 Evaluating and Simplifying Expressions ng Expressions
22.	TOP: KEY: ANS:	Evaluating and Si	F: L2 mplifying Express Evaluating and Sinsions	ions	0-7 Evaluating and Simplifying Expressions ng Expressions
23.	TOP:	Evaluating and Si Skills Handbook: polynomial squa	F: L2 mplifying Express Evaluating and Sin re of a binomial e	ions mplifyi	• 1
24.	TOP: KEY: ANS:	Evaluating and Si Skills Handbook:	F: L1 mplifying Express Evaluating and Sin omial expression	ions mplifyi	• 1
25.	TOP:	Evaluating and Si	F: L2 mplifying Express Evaluating and Sin ession simplify	ions	0-7 Evaluating and Simplifying Expressions ng Expressions
		1 DI Simplifying Ratio ratios simplify			0-8 Simplifying Ratios Skills Handbook: Simplifying Ratios

26. ANS: $\frac{1}{4}$ PTS: 1 DIF: L2 **REF:** 0-8 Simplifying Ratios **OBJ:** Simplifying Ratios TOP: Skills Handbook: Simplifying Ratios KEY: ratios | simplify 27. ANS: 4x : 1PTS: 1 DIF: L2 REF: 0-8 Simplifying Ratios TOP: Skills Handbook: Simplifying Ratios **OBJ:** Simplifying Ratios KEY: ratios | simplify 28. ANS: 8 17 PTS: 1 DIF: L3 **REF:** 0-8 Simplifying Ratios **OBJ:** Simplifying Ratios TOP: Skills Handbook: Simplifying Ratios KEY: ratios | simplify 29. ANS: -36REF: 0-9 Absolute Value PTS: 1 DIF: L2 OBJ: Absolute Value TOP: Skills Handbook: Absolute Value KEY: absolute value 30. ANS: 31 PTS: 1 DIF: L1 REF: 0-9 Absolute Value OBJ: Absolute Value TOP: Skills Handbook: Absolute Value KEY: absolute value 31. ANS: -5PTS: 1 DIF: L1 REF: 0-9 Absolute Value OBJ: Absolute Value TOP: Skills Handbook: Absolute Value KEY: absolute value 32. ANS: ± 8 PTS: 1 DIF: L3 REF: 0-9 Absolute Value OBJ: Absolute Value TOP: Skills Handbook: Absolute Value KEY: absolute value | absolute value equation

33. ANS:

 ± 27

PTS: 1 DIF: L3 REF: 0-9 Absolute Value

OBJ: Absolute Value TOP: Skills Handbook: Absolute Value

KEY: absolute value | absolute value equation

34. ANS:

±6

PTS: 1 DIF: L3 REF: 0-9 Absolute Value

OBJ: Absolute Value TOP: Skills Handbook: Absolute Value

KEY: absolute value | absolute value equation

35. ANS:

 ± 41

PTS: 1 DIF: L1 REF: 0-9 Absolute Value

OBJ: Absolute Value TOP: Skills Handbook: Absolute Value

KEY: absolute value | absolute value equation

36. ANS:

(-4, 5)

PTS: 1 DIF: L1 REF: 0-10 The Coordinate Plane

OBJ: The Coordinate Plane TOP: Skills Handbook: The Coordinate Plane

KEY: ordered pair | coordinate plane

37. ANS:

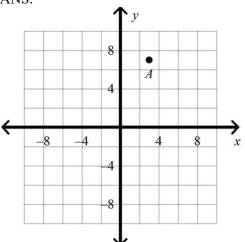
(3, 2)

PTS: 1 DIF: L1 REF: 0-10 The Coordinate Plane

OBJ: The Coordinate Plane TOP: Skills Handbook: The Coordinate Plane

KEY: ordered pair | coordinate plane

38. ANS:

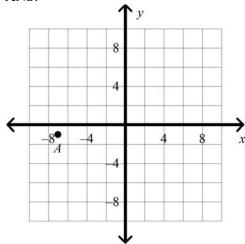


PTS: 1 DIF: L1 REF: 0-10 The Coordinate Plane

OBJ: The Coordinate Plane TOP: Skills Handbook: The Coordinate Plane

KEY: ordered pair | coordinate plane

39. ANS:



PTS: 1 DIF: L1 REF: 0-10 The Coordinate Plane

OBJ: The Coordinate Plane TOP: Skills Handbook: The Coordinate Plane

KEY: ordered pair | coordinate plane

40. ANS:

Quadrant I

PTS: 1 DIF: L1 REF: 0-10 The Coordinate Plane

OBJ: The Coordinate Plane TOP: Skills Handbook: The Coordinate Plane

KEY: ordered pair | coordinate plane

41. ANS:

Quadrant IV

PTS: 1 DIF: L1 REF: 0-10 The Coordinate Plane

OBJ: The Coordinate Plane TOP: Skills Handbook: The Coordinate Plane

KEY: ordered pair | coordinate plane

42. ANS:

y-axis

PTS: 1 DIF: L1 REF: 0-10 The Coordinate Plane

OBJ: The Coordinate Plane TOP: Skills Handbook: The Coordinate Plane

KEY: ordered pair | coordinate plane

43. ANS:

9

PTS: 1 DIF: L2 REF: 0-11 Solving and Writing Linear Equations

OBJ: Solving and Writing Linear Equations

TOP: Skills Handbook: Solving and Writing Linear Equations KEY: solving linear equations

44. ANS:

-6

PTS: 1 DIF: L2 REF: 0-11 Solving and Writing Linear Equations

OBJ: Solving and Writing Linear Equations

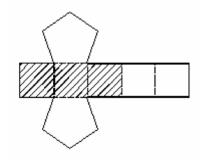
TOP: Skills Handbook: Solving and Writing Linear Equations KEY: solving linear equations

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45. ANS:
    7
    PTS: 1
                        DIF: L2
                                            REF: 0-11 Solving and Writing Linear Equations
    OBJ: Solving and Writing Linear Equations
    TOP: Skills Handbook: Solving and Writing Linear Equations KEY: solving linear equations
46. ANS:
    17
    PTS: 1
                        DIF: L1
                                            REF: 0-11 Solving and Writing Linear Equations
    OBJ: Solving and Writing Linear Equations
    TOP: Skills Handbook: Solving and Writing Linear Equations KEY: solving linear equations
47. ANS:
    2
    PTS: 1
                        DIF: L3
                                            REF: 0-11 Solving and Writing Linear Equations
    OBJ: Solving and Writing Linear Equations
    TOP: Skills Handbook: Solving and Writing Linear Equations KEY: solving linear equations
48. ANS:
    4
    PTS: 1
                        DIF: L3
                                            REF: 0-11 Solving and Writing Linear Equations
    OBJ: Solving and Writing Linear Equations
    TOP: Skills Handbook: Solving and Writing Linear Equations KEY: solving linear equations
49. ANS:
    125
    PTS: 1
                        DIF: L1
                                            REF: 0-11 Solving and Writing Linear Equations
    OBJ: Solving and Writing Linear Equations
    TOP: Skills Handbook: Solving and Writing Linear Equations KEY: solving linear equations
50. ANS:
    -17
    PTS: 1
                        DIF: L1
                                            REF: 0-11 Solving and Writing Linear Equations
    OBJ: Solving and Writing Linear Equations
    TOP: Skills Handbook: Solving and Writing Linear Equations
    KEY: solving linear equations | writing linear equations | word problem
51. ANS:
    80
    PTS: 1
                        DIF: L3
                                            REF: 0-11 Solving and Writing Linear Equations
    OBJ: Solving and Writing Linear Equations
    TOP: Skills Handbook: Solving and Writing Linear Equations
    KEY: solving linear equations | writing linear equations | word problem
```

52. ANS: 0.731 PTS: 1 DIF: L1 REF: 0-12 Percents OBJ: Percents TOP: Skills Handbook: Percents KEY: percents | decimals 53. ANS: 0.29 PTS: 1 DIF: L1 REF: 0-12 Percents OBJ: Percents TOP: Skills Handbook: Percents KEY: percents | decimals 54. ANS: 0.55 PTS: 1 DIF: L1 REF: 0-12 Percents TOP: Skills Handbook: Percents OBJ: Percents KEY: percents | decimals 55. ANS: 68.48 PTS: 1 DIF: L2 REF: 0-12 Percents TOP: Skills Handbook: Percents OBJ: Percents KEY: percents 56. ANS: about 19 PTS: 1 DIF: L1 REF: 0-12 Percents TOP: Skills Handbook: Percents OBJ: Percents KEY: percents | estimation 57. ANS: about 13 PTS: 1 DIF: L2 REF: 0-12 Percents OBJ: Percents TOP: Skills Handbook: Percents KEY: percents | estimation PTS: 1 58. ANS: B DIF: L2 REF: 1-1 Nets and Drawings for Visualizing Geometry OBJ: 1-1.1 To make nets and drawings of three-dimensional figures NAT: CC G.CO.1| G.1.d| G.1.e| G.3.b TOP: 1-1 Problem 1 Identifying a Solid From a Net

KEY: net

59. ANS:



PTS: 1 DIF: L3 REF: 1-1 Nets and Drawings for Visualizing Geometry

OBJ: 1-1.1 To make nets and drawings of three-dimensional figures

NAT: CC G.CO.1 G.1.d G.1.e G.3.b TOP: 1-1 Problem 2 Drawing a Net From a Solid

KEY: net

60. ANS:

13

PTS: 1 DIF: L2 REF: 1-3 Measuring Segments

OBJ: 1-3.1 To find and compare lengths of segments NAT: CC G.CO.1 CC G.GPE.6 G.3.b

TOP: 1-3 Problem 1 Measuring Segment Lengths KEY: coordinate | distance

61. ANS:

15

PTS: 1 DIF: L2 REF: 1-3 Measuring Segments

OBJ: 1-3.1 To find and compare lengths of segments NAT: CC G.CO.1 CC G.GPE.6 G.3.b

TOP: 1-3 Problem 2 Using the Segment Addition Postulate KEY: coordinate | distance

62. ANS:

x = 14

PTS: 1 DIF: L3 REF: 1-3 Measuring Segments

OBJ: 1-3.1 To find and compare lengths of segments NAT: CC G.CO.1 | CC G.GPE.6 | G.3.b

TOP: 1-3 Problem 2 Using the Segment Addition Postulate KEY: coordinate | distance

63. ANS:

x = 10, EF = 8, FG = 15

PTS: 1 DIF: L4 REF: 1-3 Measuring Segments

OBJ: 1-3.1 To find and compare lengths of segments NAT: CC G.CO.1 CC G.GPE.6 G.3.b

TOP: 1-3 Problem 2 Using the Segment Addition Postulate KEY: coordinate | distance

64. ANS:

15

PTS: 1 DIF: L4 REF: 1-3 Measuring Segments

OBJ: 1-3.1 To find and compare lengths of segments NAT: CC G.CO.1 CC G.GPE.6 G.3.b

TOP: 1-3 Problem 2 Using the Segment Addition Postulate

KEY: coordinate | distance | partition segment in a given ratio

```
65. ANS:
    BE
    PTS: 1
                        DIF: L3
                                            REF: 1-3 Measuring Segments
    OBJ: 1-3.1 To find and compare lengths of segments
                                                               NAT: CC G.CO.1| CC G.GPE.6| G.3.b
    TOP: 1-3 Problem 3 Comparing Segment Lengths
                                                               KEY: congruent segments
66. ANS:
    x = 20, RZ = 150, and RT = 300
    PTS: 1
                        DIF: L3
                                            REF: 1-3 Measuring Segments
    OBJ: 1-3.1 To find and compare lengths of segments
                                                               NAT: CC G.CO.1 | CC G.GPE.6 | G.3.b
    TOP: 1-3 Problem 4 Using the Midpoint KEY: midpoint
67. ANS:
    D
    PTS: 1
                        DIF: L2
                                            REF: 1-3 Measuring Segments
    OBJ: 1-3.1 To find and compare lengths of segments
                                                               NAT: CC G.CO.1| CC G.GPE.6| G.3.b
    TOP: 1-3 Problem 4 Using the Midpoint KEY: midpoint
68. ANS:
    ST = 63, TU = 63, and SU = 126
    PTS: 1
                        DIF: L4
                                            REF: 1-3 Measuring Segments
    OBJ: 1-3.1 To find and compare lengths of segments
                                                               NAT: CC G.CO.1| CC G.GPE.6| G.3.b
    TOP: 1-3 Problem 4 Using the Midpoint KEY: midpoint
69. ANS: C
                        PTS: 1
                                            DIF: L2
                                                                REF: 1-4 Measuring Angles
    OBJ: 1-4.1 To find and compare the measures of angles
                                                               NAT: CC G.CO.1| M.1.d| G.3.b
    TOP: 1-4 Problem 2 Measuring and Classifying Angles
    KEY: obtuse angle | straight angle | right angle | acute angle
70. ANS:
    190 feet
    PTS: 1
                        DIF: L2
                                            REF: 1-8 Perimeter, Circumference, and Area
    OBJ: 1-8.1 To find the perimeter or circumference of basic shapes
    NAT: CC N.Q.1| M.1.c| M.1.f| M.2.a| G.3.b| A.4.e
    TOP: 1-8 Problem 1 Finding the Perimeter of a Rectangle
                                                               KEY: rectangle | perimeter
71. ANS:
    78\pi in.
    PTS: 1
                        DIF: L3
                                            REF: 1-8 Perimeter, Circumference, and Area
    OBJ: 1-8.1 To find the perimeter or circumference of basic shapes
    NAT: CC N.Q.1 | M.1.c | M.1.f | M.2.a | G.3.b | A.4.e
```

TOP: 1-8 Problem 2 Finding Circumference

KEY: circle | circumference

72. ANS: $441 \pi \text{ in.}^2$

PTS: 1 DIF: L3 REF: 1-8 Perimeter, Circumference, and Area

OBJ: 1-8.2 To find the area of basic shapes

NAT: CC N.Q.1| M.1.c| M.1.f| M.2.a| G.3.b| A.4.e

TOP: 1-8 Problem 5 Finding Area of a Circle KEY: area | circle

73. ANS: 68 ft²

PTS: 1 DIF: L2 REF: 1-8 Perimeter, Circumference, and Area

OBJ: 1-8.2 To find the area of basic shapes

NAT: CC N.Q.1| M.1.c| M.1.f| M.2.a| G.3.b| A.4.e

TOP: 1-8 Problem 6 Finding Area of an Irregular Shape KEY: area | rectangle