Unit 4 – Circles & Area

Grade 7 Mathematics
Exam Review

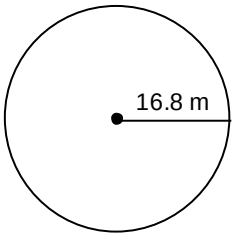
1. A circle has radius 20 cm. What is the diameter?

2. A circle has diameter 14 cm. What is the radius?

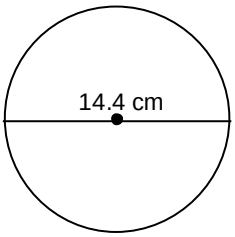
3. A circle has radius 35.6 cm. What is the diameter?

4. A circle has diameter 44.6 m. What is the radius?

5. What is the diameter of this circle?

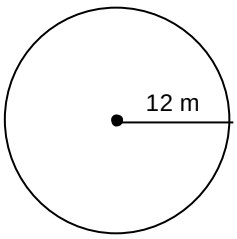


6. What is the radius of the circle?

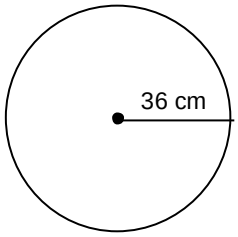


7. Four identical circles of the largest possible size are drawn on a square sheet of paper. The side length of the square paper is 4.8 cm. What is the radius of each circle?

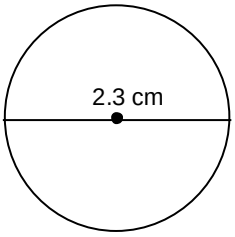
8. Find the circumference of this circle. Leave π in your answer.



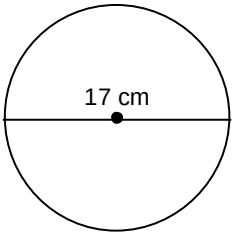
9. Find the circumference of this circle. Leave π in your answer.



10. Find the circumference of this circle. Leave π in your answer.



11. Estimate the circumference of this circle.



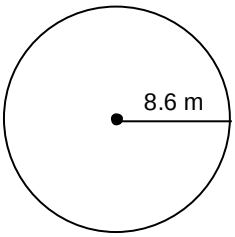
12. Estimate the diameter of a circle with circumference 69 m.

13. The circumference of a circle is 50π cm. Find the diameter and radius.

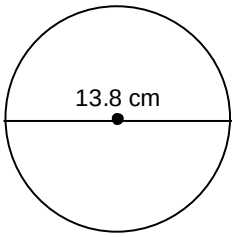
14. The radius of a circular lid is 3.7 cm.
Calculate the circumference. Round your answer to one decimal place.

15. The circumference of a circle is 11 cm.
Calculate the radius. Round your answer to one decimal place.

16. Calculate the circumference of this circle. Round your answer to two decimal places.

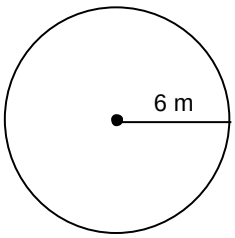


17. Calculate the circumference of this circle. Round your answer to one decimal place.



18. Find the radius of a circle with a circumference of 56.7 mm.
Round your answer to one decimal place.

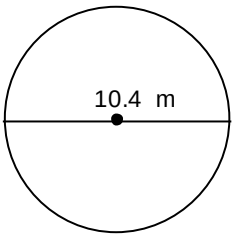
19. Calculate the circumference of this circle. Round your answer to one decimal place.



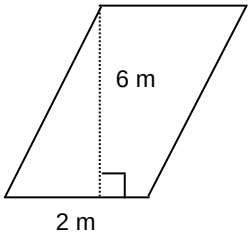
20. The distance around Earth at the equator is about 40 074 km.
Find the diameter at the equator of Earth. Round your answer to the nearest kilometre.

21. A circle has a circumference of 43.6 m.
Find the radius and the diameter. Round your answers to two decimal places.

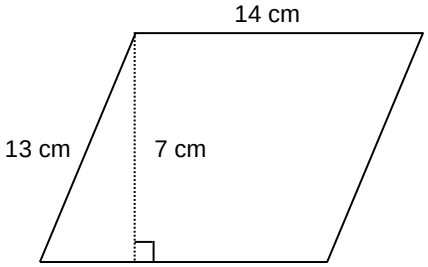
22. Calculate the circumference of this circle. Round your answer to one decimal place.



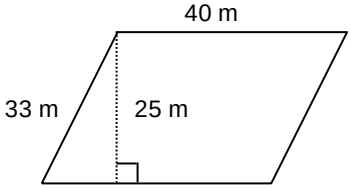
23. Find the area of this parallelogram.



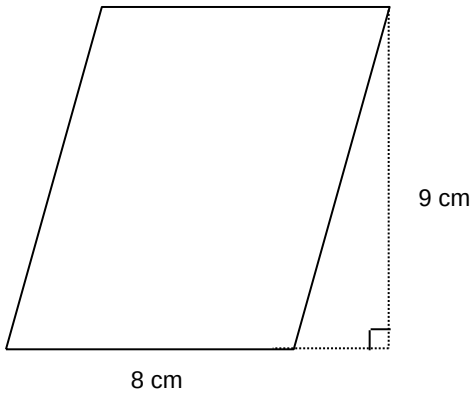
24. Find the area of this parallelogram.



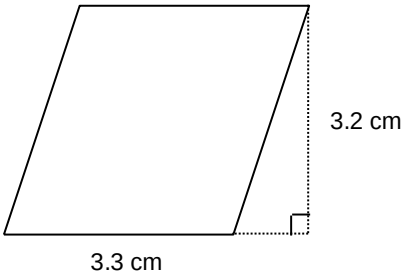
25. Find the area of this parallelogram.



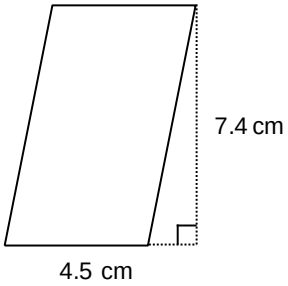
26. Find the area of the parallelogram.



27. Find the area of this parallelogram.

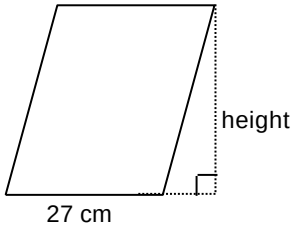


28. Find the area of this parallelogram.



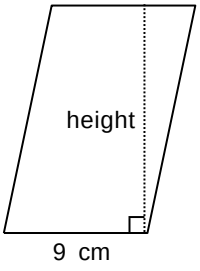
29. Find the area of a parallelogram with base 30 cm and height 4 cm.

30. Use the area to find the height of the parallelogram.
$A = 864\ cm^2$



31. Find the area of a parallelogram with base 55 cm and height 13.8 cm.

32. Use the area to find the height.
$A = 99\ cm^2$

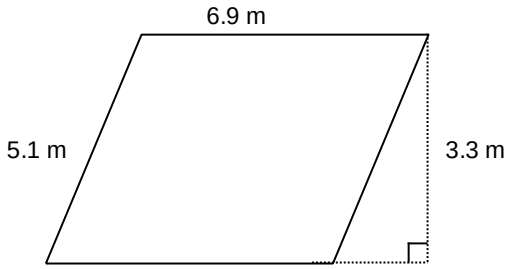


33. The area of a parallelogram is 26.4 cm^2. The height is 4 cm. Find the base.

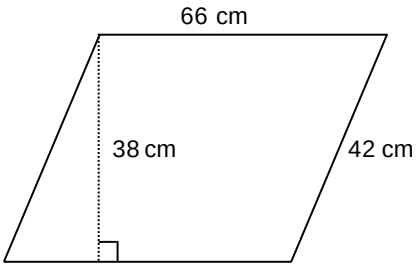
34. The area of a parallelogram is 46.5 cm^2.The base is 7.5 cm. Find the height.

35. Find the area of the parallelogram with base 35 cm and height 9.8 cm.

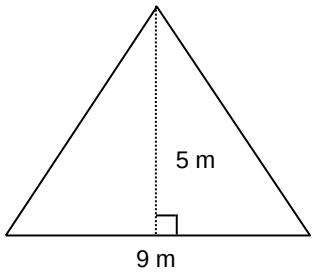
36. Find the area of this parallelogram.



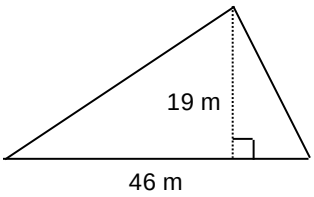
37. Find the area of this parallelogram.



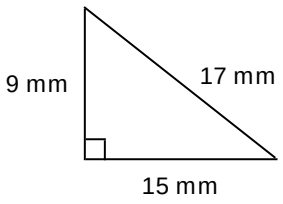
38. Find the area of this triangle.



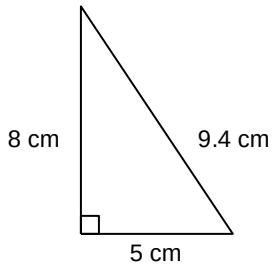
39. Find the area of this triangle.



40. Find the area of this right triangle.



41. Find the area of this triangle.

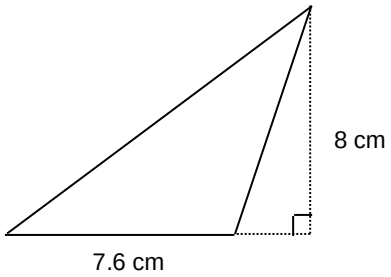


42. The area of a triangle is 135 cm^2. If the base measures 18 cm, what is the height?

43. The student council is making 6 pennants to promote school spirit.
Each pennant is in the shape of a right triangle 20 cm high and 60 cm long.
What is the total area of the 6 pennants?

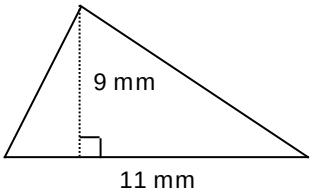
44. Find the area of a triangle with base 45 m and height 9 m.

45. Find the area of this triangle.



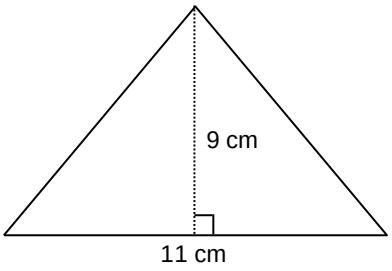
46. A triangle has area 65 m^2 and height 13 m. What is the length of the base?

47. Find the area of this triangle.

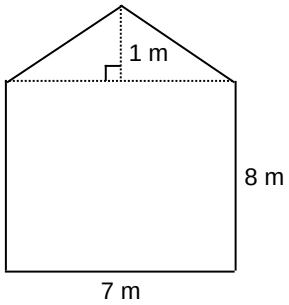


48. A town plans to build a triangular park. The triangle will have base 60 m and height 38 m. What will be the area of the park?

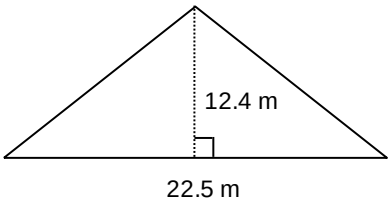
49. Amanda is making a quilt with this triangular shape. She plans to cut out 46 triangles from different fabrics. What is the total area of the material Amanda will use?



50. What is the area of the front of this storage building?



51. Find the area of this triangle.

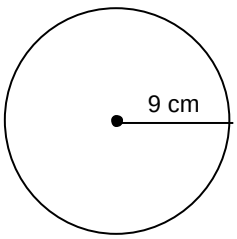


52. Find the area of a triangle with base 6.1 m and height 7.9 m.

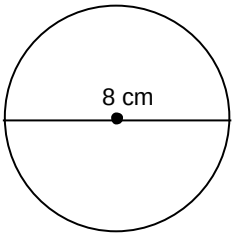
53. A rectangular piece of fabric measures 56 cm by 72 cm. A triangular scarf with height 15 cm and base 26 cm is cut from the fabric. How much fabric is left?

54. A circle has radius 9 cm. Use $\pi = 3$ to estimate the area.

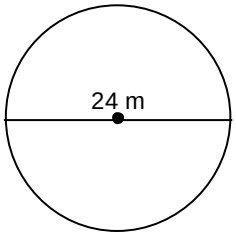
55. Find the area of this circle. Leave π in your answer.



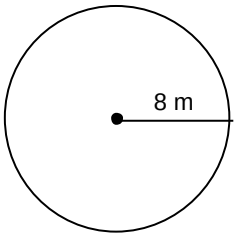
56. Find the area of this circle. Leave π in your answer.



57. Find the area of this circle. Leave π in your answer.

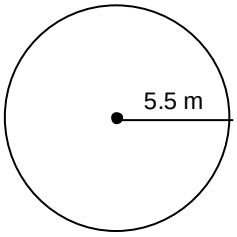


58. What is the area of this circle? Round your answer to the nearest square metre.

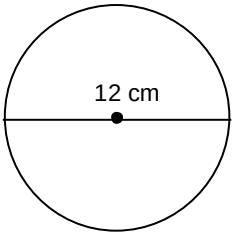


59. A circle has radius 40 centimetres. Find the area. Round your answer to the nearest square centimetre.

60. Find the area of this circle. Leave π in your answer.

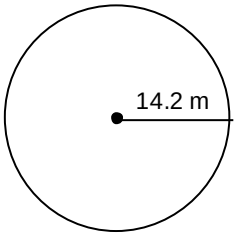


61. Find the area of this circle. Round your answer to two decimal places.



62. Find the area of a circle that has diameter 27.4 mm. Round your answer to one decimal place.

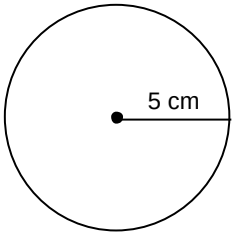
63. Find the area of this circle. Round your answer to two decimal places.



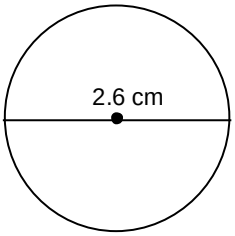
64. Find the area of a circular table top with diameter 56 cm.
Round your answer to the nearest square centimetre.

65. A circular clock face has diameter 21 cm.
What is the area of the clock face? Round your answer to one decimal place.

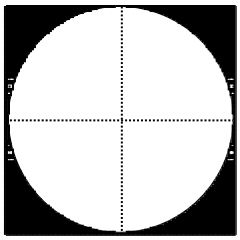
66. Find the area of this circle. Round your answer to two decimal places.



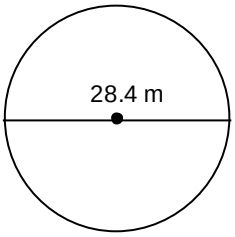
67. Find the area of this circle. Leave π in your answer.



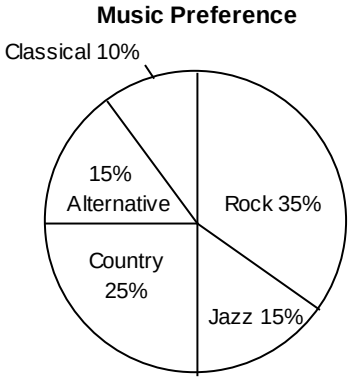
68. The circle inside the square has diameter 14 m.
Find the total area of the shaded regions. Round your answer to one decimal place.



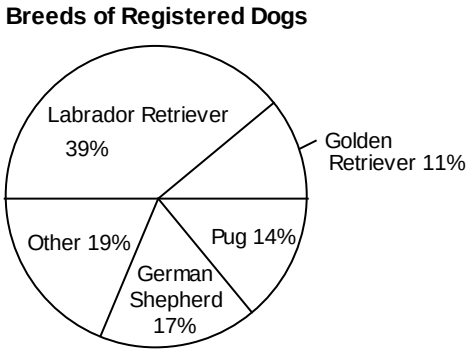
69. Find the area of this circle. Round your answer to two decimal places.



70. The circle graph shows the music preferences of a random sample of radio listeners. What percent of people surveyed prefer Country or Jazz?

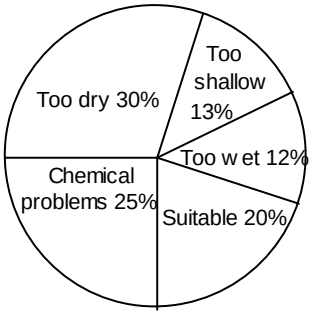


71. The circle graph shows the breeds of registered dogs at the Clover City Kennel Club. What percent of dogs are Labrador Retrievers or German Shepherds?



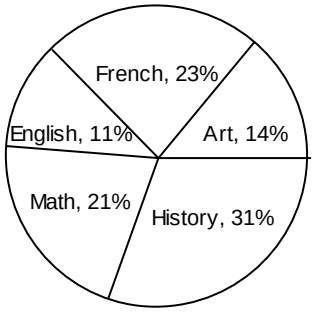
72. The circle graph shows data on the suitability of land for farming.
Which 2 categories account for half of the land?

Land Suitability for Farming



The circle graph shows how a college student breaks down her study time in a typical week.

Study Time per Week

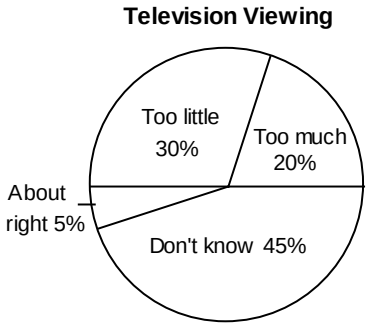


73. What fraction of the time is spent on Art and Math?

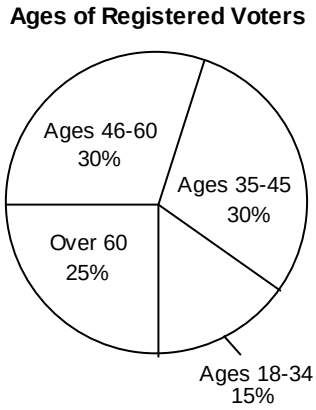
74. If the student spends 40 h per week studying, how much time is spent studying Art?

75. If the student spends 40 h per week studying, how much time is spent studying Math and French?

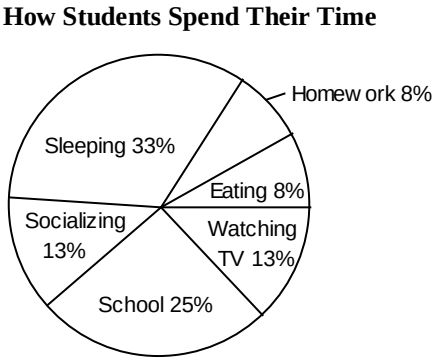
76. Students were asked whether they spend too much or too little time watching television.
The circle graph shows the responses of 140 students.
How many students thought they watched about the right amount of television?



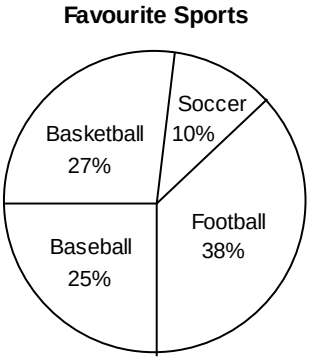
77. The circle graph shows the different age groups of registered voters in the Cane Region.
There are 3000 registered voters in the Cane Region.
How many voters are 46-60 years old?



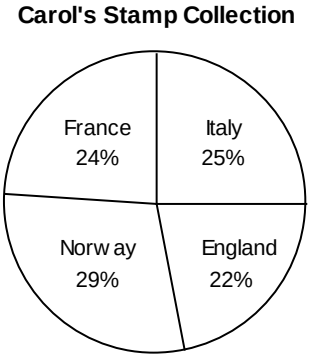
78. Grade 7 students were surveyed on how many hours per day they spend on various activities.
About how many hours per day are spent on homework and school?



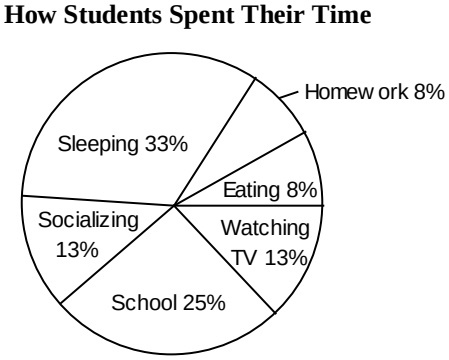
79. All 500 students at Robinson Junior High were surveyed to find their favourite sports.
How many more students prefer football to baseball?



80. Carol has a collection of 900 stamps. The circle graph shows the percent of stamps from each country.
How many more stamps are from France than from England?



81. Grade 8 students were surveyed on how many hours per week they spend on various activities.
About how many hours per week are spent on homework and eating?



82. Find the central angle of a sector that represents 14% in a circle graph.
Round to the nearest degree if necessary.

83. This table shows the number of students who attended the last basketball game.
The data are displayed in a circle graph. What percent of the graph represents the 6th graders?

Grade	Number of Students
6	224
7	120
8	216

84. The table shows the number of students who attended the last football game.
If the data were displayed in a circle graph, what percent of the graph would represent the 6th graders?

Grade	Number of Students
6	115
7	133
8	252

85. The table shows the number of students who attended the concert last night.
If the data were displayed in a circle graph, what percent of the graph would represent the 6th graders who attended the concert?

Grade	Number of Students
6	375
7	275
8	350

86. Find the central angle of a sector that represents 85% of a circle graph.
Round to the nearest degree if necessary.

87. A group of students attending an outdoor school were asked for their favourite activity.

Activity	Number of Students
Kayaking	18
Climbing	8
Hiking	8
Sailing	6

Write the number of students who voted for each activity as percents.

The table shows the number of hours per week a college student spends on different subjects.

Subject	Number of Hours
English	8
French	10
Art	5
Math	8
History	9

88. What is the sector angle for English?

89. What is the sector angle for Math?

90. What is the sector angle for History?

91. A survey is conducted at a school about a music program. Here are the results:

- 250 students like the program.
- 115 students do not like the program.
- 140 students have no opinion.

A circle graph is made from these data.
What is the central angle of the sector that represents students who like the program?

92. The table shows the percent of Alan's income that is allocated to different purposes.

Allocation	Percent
Housing	38%
Food	36%
Transport	16%
Other	10%

Calculate the sector angles if the data is to be displayed in a circle graph.

93. Which tables contain data that should **not** be displayed in circle graphs?

Table P: Students with These Electronics

Electronics	Cell phone	Computer	Digital Camera	Video games
Number of Students	25	29	22	33

Table Q: Students Ages 11-14

Age	11	12	13	14
Number of Students	38	41	46	34

Table R: Places of Birth

Place of Birth	BC	Alberta	Saskatchewan	Manitoba
Number of Students	32	38	30	31

Table S: Various Pets

Pets	Dog	Cat	Bird	Fish
Number of Students	21	22	17	15

Unit 4 - Answer Key

1. 40 cm

2. 7 cm

3. 71.2 cm

4. 22.3 m

5. 33.6 m

6. 7.2 cm

7. 1.2 cm

8. 24π m

9. 72π cm

10. 2.3π cm

11. 51 cm

12. 23 m

13. 50 cm; 25 cm

14. 23.2 cm

15. 1.8 cm

16. 54.04 m

17. 43.4 cm

18. 9.0 mm

19. 37.7 m

20. 12 756 km

21. 6.94 m; 13.88 m

22. 32.7 m

23. 12 m^2

24. 98 cm^2

25. 1000 m^2

26. 72 cm^2

27. 10.56 cm^2

28. 33.3 cm^2

29. 120 cm^2

30. 32

31. 759 cm^2

32. 11 cm

33. 6.6 cm

34. 6.2 cm

35. 343 cm^2

36. 22.77 m^2

37. 2508 cm^2

38. 22.5 m^2

39. 437 m^2

40. 67.5 mm^2

41. 20 cm^2

42. 15 cm

43. 3600 cm^2

44. 202.5 m^2

45. 30.4 cm^2

46. 10 m

47. 49.5 mm^2

48. 1140 m^2

49. 2277 cm^2

50. 59.5 m^2

51. 139.5 m^2

52. 24.1 m^2

53. 3837 cm^2

54. 243 cm^2

55. 81π cm^2

56. 16π cm^2

57. 144π m^2

58. 201 m^2

59. 5027 cm^2

60. 30.25π m^2

61. 113.10 cm^2

62. 589.6 mm^2

63. 633.47 m^2

64. 2463 cm^2

65. 346.4 cm^2

66. 78.54 cm^2

67. 1.69π cm^2

68. 42.1 m^2

69. 633.47 m^2

70. 40%

71. 56%

72. Suitable and Too dry

73. about $\frac{1}{3}$

74. 5.6 h

75. 17.6 h

76. 7 students

77. 900

78. 8 h

79. 65 students

80. 18 stamps

81. 27 h

82. 50°

83. 40%

84. 23%

85. 37.5%

86. 306°

87.

Activity	Percent
Kayaking	45%
Climbing	20%
Hiking	20%
Sailing	15%

88. 72°

89. 72°

90. 81°

91. 178°

92.

Allocation	Angle
Housing	137°
Food	130°
Transport	58°
Other	36°

93. P and S

a
m

e
v
i
e
w