Ohio Achievement Test
Grade 7 Mathematics

March 2006

Answer Key
and
Scoring Guidelines

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Item No.	Item Format	Content Standard	Content Standard Benchmark	Answer Key
1	Multiple Choice	Number, Number Sense and Operations	E	Not for Public Release
2	Multiple Choice	Geometry and Spatial Sense	D	D
3	Multiple Choice	Measurement	A	Not for Public Release
4	Multiple Choice	Data Analysis and Probability	B	B
5	Multiple Choice	Patterns Functions and Algebra	K	Not for Public Release
6	Short Answer	Measurement	E	Not for Public Release
7	Multiple Choice	Data Analysis and Probability	A	D
8	Multiple Choice	Geometry and Spatial Sense	E	Not for Public Release
9	Multiple Choice	Patterns Functions and Algebra	J	D
10-15	**Items 10-15 Field Test Items Not Used in Student Score**			
16	Short Answer	Data Analysis and Probability	H; I;	Not for Public Release
17	Multiple Choice	Measurement	B	Not for Public Release
18	Multiple Choice	Patterns Functions and Algebra	G	D
19	Multiple Choice	Number, Number Sense and Operations	H	Not for Public Release
20	Multiple Choice	Geometry and Spatial Sense	F	B
21	Extended Response	Patterns Functions and Algebra	A	Not for Public Release
22	Multiple Choice	Measurement	F	D
23	Multiple Choice	Geometry and Spatial Sense	G	Not for Public Release
24	Multiple Choice	Data Analysis and Probability	H	Not for Public Release
25	Multiple Choice	Number, Number Sense and Operations	I	B
26	Short Answer	Geometry and Spatial Sense	E	2 pt rubric
27	Multiple Choice	Patterns Functions and Algebra	H	Not for Public Release
28	Multiple Choice	Number, Number Sense and Operations	E	A
29	Multiple Choice	Data Analysis and Probability	K	Not for Public Release
30	Multiple Choice	Measurement	D	A
31	Extended Response	Number, Number Sense and Operations	H; I;	Not for Public Release
32	Multiple Choice	Patterns Functions and Algebra	B	Not for Public Release
33	Multiple Choice	Geometry and Spatial Sense	H	A
34	Multiple Choice	Measurement	C	Not for Public Release
35	Multiple Choice	Data Analysis and Probability	G	Not for Public Release
36	Short Answer	Measurement	B	2 pt rubric
37	Multiple Choice	Geometry and Spatial Sense	G	Not for Public Release
38	Multiple Choice	Patterns Functions and Algebra	K	D
39	Multiple Choice	Data Analysis and Probability	F	C
40	Multiple Choice	Number, Number Sense and Operations	I	D
41	Short Answer	Data Analysis and Probability	I	2 pt rubric
42	Multiple Choice	Geometry and Spatial Sense	E; G;	Not for Public Release
43	Multiple Choice	Number, Number Sense and Operations	H	D
44	Multiple Choice	Measurement	C	A
45	Multiple Choice	Geometry and Spatial Sense	H	Not for Public Release

Limited = 0-9; Basic = 10-15; Proficient = 16-28; Accelerated = 29-36; Advanced = 37-50
Multiple Choice = 1 point; Short Answer = 2 points; Extended Response = 4 points

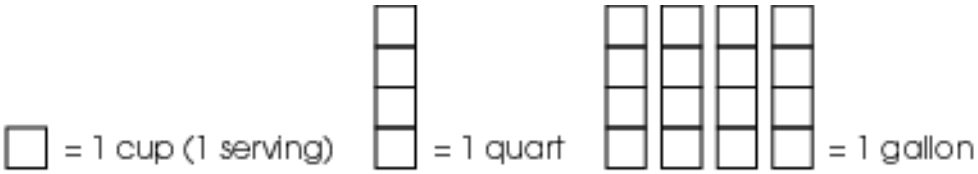
26. Find the ratio of the circumference of Circle A to the circumference of Circle B. Show your work or provide an explanation to support your answer. Write your answer in the **Answer Document**. (**2 points**)

Scoring Guidelines

Points	Student Response
2 point	The focus of the task is using proportional relationships to describe the relationship between the circumferences of similar circles. The response provides the correct ratio of one circle to the other circle with supporting work or an adequate explanation. **Sample Response:** • The ratio is 2 to 3 since the ratio of the radius is also 2 to 3. • The ratio is 2 to 3. $\frac{2\pi r}{2\pi r}=\frac{2\pi 4}{2\pi 6}=\frac{2}{3}$ • The ratio is $\frac{2\pi r}{2\pi r}=\frac{2\pi 4}{2\pi 6}=\frac{25.12}{37.68}$ • The ratio is 4 to 6 or $\frac{4}{6}$ because $2\pi \div 2\pi = 1$, and 1 x $\frac{4}{6}$ = $\frac{4}{6}$. • The ratio is $\frac{2\pi r}{2\pi r}=\frac{2\pi 4}{2\pi 6}=\frac{8}{12}$ because $\frac{\pi}{\pi}=1$
1 point	The response provides partial evidence of using proportional relationships to describe the relationship between the circumferences of the two circles; however, the solution is incomplete or slightly flawed. **Sample Response:** • Identify the ratio of 2 to 3 with no supporting work or explanation. • Provide a correct ratio with computational errors during simplification. $\frac{2\pi r}{2\pi r}=\frac{2\pi 4}{2\pi 6}=\frac{6\pi}{12\pi}=\frac{1}{2}$ • Provide correct circumferences for both circles with or without work.
0 point	The response provides inadequate evidence of using proportional relationships to describe the relationship between the circumferences of the two circles. The response provides major flaws in reasoning or irrelevant information. **Sample Response:** • State that $8\pi \times 12\pi = 96$ • Provide only the circumference of one circle. • Show 8π • Be blank or state unrelated statements. • Copy information from the stem.

36. Find the number of 8-ounce servings she can make. Show how you found the answer. Write your answer in the **Answer Document**. (**2 points**)

Scoring Guidelines

Points	Student Response
2 point	The focus of the task is to provide evidence of converting units within the same measurement system to figure out the number of 8-ounce servings. The response indicates the correct number of servings/cups **AND** provides work showing the correct conversion of units. 1 quart = 32 ounces and 1 gallon = 128 ounces, so Coach Larson has a total of 160 ounces of punch. At 8 ounces per serving/cup (160 oz ÷ 8 oz = 20), she can make 20 servings/cups. **Sample Response:**  • 4 servings + 16 servings = 20 servings. There would be 20 servings in all. ▪ 1 quart = 32 ounces = 4 cups. 1 gallon = 4 quarts. 4 x 4 = 16. 16 + 4 = 20. She can make 20 cups (servings). **NOTE**: Other conversion methods are acceptable (e.g., gallons to cups, quarts to cups).
1 point	The response indicates partial evidence of how to convert units of measure; however, the solution is incomplete or slightly flawed. **Sample Response:** • Make one correct conversion and one incorrect conversion. • Indicate that one quart is 32 ounces and one gallon is the same as 128 ounces, and state that Coach Larson has 160 ounces of punch. • State the correct answer without providing work (e.g., 20 cups can be made with this recipe). • Use an inaccurate conversion but show an appropriate process.
0 point	The response indicates inadequate evidence of how to convert units of measure. The response may have major flaws or be completely incorrect. **Sample Response:** • State that a gallon is larger than a quart. • Copy information that is stated in the stem.

41. Find the probability of getting a sum greater than 25. Show your work or provide an explanation to support your answer. Write your answer in the **Answer Document**. (**2 points**)

Scoring Guidelines

Points	Student Response
2 point	The focus of the task is to provide evidence of computing the probabilities of compound events. The response provides the probability of getting a sum greater than 25 with supporting work or an adequate explanation. **Sample Response:** ▪ There are 24 total possibilities, and only 13 of those possibilities are sums greater than 25. The probability is 13/24. ▪ A list of all of the correct answers and a probability of 13/24 or 54%. (1) (2) (3) (4) (5) (6) (10) 11 12 13 14 15 16 (20) 21 22 23 24 25 26 (30) 31 32 33 34 35 36 (40) 41 42 43 44 45 46 ▪ A tree diagram and a probability of 13/24 or 54%.
1 point	The response provides partial evidence of computing the probabilities of compound events; however, the solution is incomplete or slightly flawed. **Sample Response** • Provide the correct probability, but show no work or explanation. • Provide all 24 possibilities but does not determine the probability. • Provide the probability of a sum greater than 25 using the numbers on the spinner and only the numbers visible on the cube (1, 2, and 3): probability = 6/12 or 1/2. • Provide the probability of getting a sum greater than *or equal to* 25: probability = 14/24.
0 point	The response provides inadequate evidence of computing the probabilities of compound events. The response provides irrelevant information or major flaws in reasoning. **Sample Response:** • State that no sum is greater than 25 and give a probability of 0. • State that all are greater than 25 and give a probability of 1. • Copy information from the stem.