

Credit for Prior Learning: Initial Assessment QL 122/GEQL 130/OQL 130
Sample Questions

(Sources: http://www.nass.usda.gov/Statistics_by_State/New_England_includes/Publications/0605mpl.pdf
<http://dnr.wi.gov/topic/fishing/documents/reports/washburntroutponds2001-2002.pdf>
<http://dnr.wi.gov/wnrmag/2013/02/CCBrochure.pdf>; <http://legis.wisconsin.gov/lrb/bb/11bb/>
<https://www.wisconsin.edu/reports-statistics/educational-statistics/student-statistics/ten-year-full-time-equivalent-fte-reports/>)

1. Global warming creates local problems. Projections forecast that even a moderate air temperature increase of only 1.8 °F could cause brook trout distributions to decrease dramatically. For example, such a temperature increase would take Washburn county's 19 ponds that support brook trout down to 10 ponds. What would be the percent decrease in the number of ponds that support brook trout?
2. Virtually every county in the state has seen increases in spring average temperature from 1950 to 2010. Washburn is the most extreme case. The ratio of the number of counties with an average temperature increase of 4.5 degrees or more to the number of counties with an average increase below 4.5 degrees is 2 to 7. If 16 Wisconsin counties have had average temperature increases of 4.5 degrees or more, how many counties experienced increases below 4.5 degrees?
3. Washburn County's 3.6 acre Priceless Pond currently supports about 97.5 brook trout per acre. What is the brook trout population of the pond?
4. Gill lice are tiny parasites that thrive in rising temperatures. The lice infect only brook trout, potentially suffocating them, as they attach to the fish's gills and compromise the trout's ability to obtain sufficient oxygen. Some brook trout populations, such as the one in Tenny Spring Creek in Vernon, have as high as a 39% infection rate. If the population in this creek is 843, how many are infected with this parasite?
5. As recent as 2008, Wisconsin was the number four producer of maple syrup in our nation where only ten states produce it. However, the extreme March heat in 2012 decimated this Wisconsin crop because below freezing temperatures are a necessary part of the sugaring cycle. In 2012, Wisconsin produced only 50,000 gallons of the 1,900,000 gallons produced in the nation. What percent of our nation's maple syrup crop was produced in Wisconsin in 2012?

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United States Maple Syrup Production 2016-2018
(in thousands of gallons)

	2016	2017	2018
Eastern States			
Connecticut	19	20	18
Maine	675	709	539
Massachusetts	77	84	72
New Hampshire	169	154	163
New York	707	760	806
Pennsylvania	143	139	142
Vermont	1,990	1,980	1,940
West Virginia	6	9	8
Eastern Total	3786	3855	3688
Midwestern States			
Indiana	12	12	18
Michigan	90	110	125
Minnesota	14	14	13
Ohio	70	80	90
Wisconsin	235	200	225
Midwestern Total	421	416	471
United States Total	4,207	4,271	4,159

6. Use the United States maple syrup production table to answer the following questions.

- a. What fraction of the 2018 maple syrup produced in the midwest was from Wisconsin?
- b. What percent of the 2017 United States maple syrup production came from eastern states?

7. In 2016, almost 68% of Wisconsin maple syrup sales was bulk sales. What fraction, reduced, of the Wisconsin's sales that year was from bulk sales?

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8. Calculate: $\left(\frac{2}{3} - 1\frac{2}{5}\right) \div \left(2\frac{1}{2} + \frac{8}{15}\right)$

9. Simplify: $\frac{32 \div (5-3)^3 + 8}{10 - 8 \div 4 \cdot 2}$

10. Solve for x: $\frac{6-3x}{x+2} = \frac{5}{2}$

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11. The retention rate for grades 9-12 can be calculated from the formula

$$R = \frac{N}{T} \cdot 100$$

where R stands for the retention rate or percent
N stands for the number of students who finish school
T stands for the total number of students enrolled

Use the formula to determine the retention percent when the total number of students enrolled is 657 and the number of students who finish is 643.

12. Solve the retention rate formula in #10 for T. In other words, rearrange the formula to express T, the total number of students enrolled, in terms of the other variables.

13. The true tuition cost of college can be determined from the listed tuition cost, the college's discount rate, and the outside scholarships a student receives based on the formula below.

$$T = L - DL - S$$

Where T = true tuition cost
L = listed tuition cost
D = discount rate (expressed as a decimal)
S = outside scholarships student receives

Determine the true tuition for a student at a college with \$35,000 listed tuition, if the college has a 33.5% discount rate and the student has \$2000 in outside scholarships.

14. Using the formula in #11, $T = L - DL - S$, solve the formula for S. In other words, rearrange the formula for S, the outside scholarships received by the student, in terms of the other variables.

15. In the 2010-2011 school year, private school enrollment was 12.6% of the total enrollment for all elementary and secondary schools, both private and public. Private school enrollment was 125,372 that year. What was the total enrollment for all elementary and secondary schools?

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16. In the 2010-11 school year, the number of elementary grade teachers was 3,462 more than twice the number of teachers who taught in secondary grades. If 40,302 teachers taught in the elementary grades, how many teachers taught in secondary grades?
17. In 2002-03, the reported enrollment for home-schooled students was 21,288. Since then, the reported enrollment has decreased at a rate of 320 students per year. At this rate, in how many years will the home-schooled enrollment fall below 13,500 students?
18. In 2005, the enrollment at UW-Whitewater was 9396 students, and the enrollment at UW-Oshkosh was 10,145 students. Since then, UW-Whitewater's enrollment has increased by approximately 201 students per year, and UW-Oshkosh's enrollment has increased by approximately 109 students per year. When did/will the two universities have the same enrollment? Round to the nearest whole year.
19. The top two UW System Schools, based on enrollment, are UW at Madison and UW at Milwaukee. The undergraduate enrollment of UW-Milwaukee is 4,930 students less than the undergraduate enrollment at UW-Madison. If the two schools have a combined undergraduate enrollment of 55,408, what is the undergraduate enrollment of each University?