

Placement Guide for SLAM Track (Statistics and Liberal Arts Math)

Math 114 - Mathematics for Liberal Arts Majors

Math 117 - Elementary Statistics

Psych 150 – Statistics for the Behavioral Sciences

Soc 125 – Introduction to Statistics in Sociology

What are these courses?

- GE courses that fulfill the Mathematics Requirement for an Associate Degree
- If your goal is to transfer in a non-Business, non-STEM major, then one of these courses may fulfill your mathematics transfer requirement.
- Psych 150 may be most appropriate for Psychology majors.
- Soc 125 may be most appropriate for Sociology majors.
- Check with an academic counselor to see if these courses are right for you.

What is the difference between Math for Liberal Arts Majors (Math 114) and Statistics (Math 117, Psych 150, and Soc 125)?

- Math for Liberal Arts:
 - Covers a variety of topics that do not build on each other like traditional math courses.
 - Broadens understanding of the methods, history, and applications of mathematics.
 - Covers both general and practical topics such as, for example, interest rates on home financing.
- Statistics:
 - Focuses on how to analyze data and use it to make predictions.
 - Similar content across Math 117, Psych 150, and Soc 125
 - Psych 150 emphasizes problems relevant to Psychology majors (i.e. behavioral science research and analysis)
 - Soc 125 emphasizes problems relevant to sociology and other social science majors

Am I ready for these courses? What are my options? All of these courses require a similar level of mathematical preparedness, mostly at the arithmetic and pre-algebra level. On the next page you will find some problems to help you assess your readiness. Depending on your comfort level with these problems, you have two options:

- **Enroll directly in one of these courses:** Choose this option if you can confidently solve most of these problems.
- **Enroll in one of these courses along with a corresponding 2-unit Support Course (Math 110C or SS 110C):** Choose this option if some of these problems are difficult for you to complete or if you feel you could benefit from review of these skills and a slower approach to the course overall. You may also find it beneficial to enroll in **Math 74** (Pre-Algebra refresher, a 1-unit self-paced online course) while taking or prior to taking this course.

Problems to help you assess your readiness

Note: You do not necessarily need to try to work through all these problems to completion. It may be enough to read through the problems and their solutions to get a feel for how prepared you are.

1. Solve $\frac{x-3}{5} = 2$ for x without using a calculator.

2. Solve $1 = \frac{1}{4} + \frac{1}{8} + \frac{1}{2} + x$ for x without using a calculator.

3. Let $x = 2$, $y = 4$. Evaluate $x - 1.5y$ without using a calculator.

4. If $p = 0.2$, $n = 100$, evaluate $\sqrt{\frac{p(1-p)}{n}}$ with a calculator.

5. Let $x = 2$, $y = 3.1$. Evaluate $(x - y)^2$ with a calculator.

6. Convert $\frac{174}{1160}$ to a decimal using your calculator.

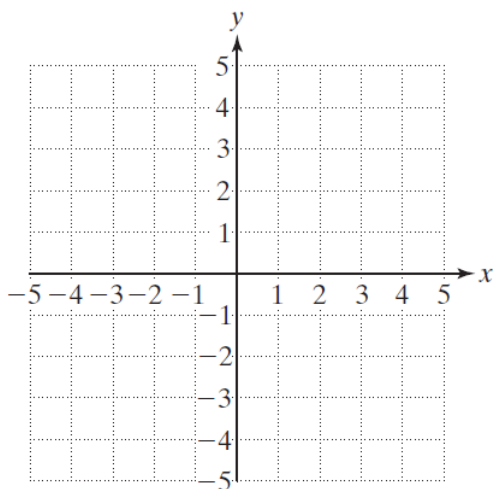
7. In a given year at SBCC, 600 students took Statistics. If 18% of them got an A and 25% got a B, how many students did *not* get an A or a B? You may use your calculator.

8. Graph the solution set to the inequality $x \leq 3$ on a number line.

9. State whether each of the following numbers *do* or *do not* belong to the interval $[-0.8, 1.2]$.

(a) -1 (b) 1 (c) 0 (d) 0.358 (e) -0.70 (f) -0.81 (g) $\frac{2}{10}$ (h) $\frac{10}{2}$

10. Plot the points $(-2, 4)$ and $(3, -1)$ on the coordinate system and draw a line that passes through those points.



Solutions

1. Multiply both sides by 5 to get $x - 3 = 10$. Add 3 to both sides to get $x = 13$

2. *Method 1:* Multiply both sides by 8 to clear fractions. This gives $8 = 2 + 1 + 4 + 8x$, which simplifies to $8 = 7 + 8x$. Subtract 7 from both sides, then divide both sides by 8 to get $x = \frac{1}{8}$

Method 2: Rewrite using a common denominator as $\frac{8}{8} = \frac{2}{8} + \frac{1}{8} + \frac{4}{8} + x$. Subtract from both sides to get $\frac{8}{8} - \frac{2}{8} - \frac{1}{8} - \frac{4}{8} = x \rightarrow \frac{8-2-1-4}{8} = x \rightarrow x = \frac{1}{8}$

3. $x - 1.5y = 2 - 1.5(4) = 2 - 6 = -4$

$$4. \sqrt{\frac{p(1-p)}{n}} = \sqrt{\frac{0.2(1-0.2)}{100}} = \sqrt{\frac{0.2(0.8)}{100}} = \sqrt{\frac{0.16}{100}} = \sqrt{0.0016} = 0.04$$

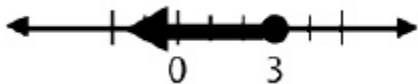
Note that $\sqrt{\frac{0.2(0.8)}{100}}$ could have been entered into the calculator directly to complete the problem in just one step, but you'd need to be careful with parentheses and order of operations.

$$5. (x - y)^2 = (2 - 3.1)^2 = (-1.1)^2 = 1.21$$

$$6. \frac{174}{1160} = 174 \div 1160 = 0.15$$

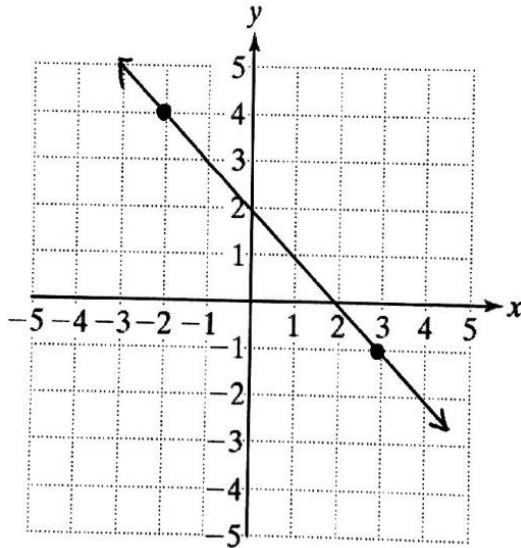
7. If 18% got an A and 25% got a B then 43% got an A or a B. Therefore 57% of students did *not* get an A or a B. 57% of 600 is found by multiplying 600 by 0.57, which gives 342 students

8.



9. The interval $[-0.8, 1.2]$ refers to numbers that are greater than or equal to -0.8 and less than or equal to 1.2 . Of the listed numbers, the ones that *do* belong are (b), (c), (d), (e), and (g). The rest do not.

10.



After reading through the solutions, which of the following most closely describes you?

- A. I am quite comfortable with all or almost all of these skills.
- B. I could use review on a lot of these skills.

If you chose **A** then you should **Enroll in Math 114 or Math 117 or Psych 150 or Soc 125.**

If you chose **B** then you should **Enroll in Math 114 or Math 117 or Psych 150 or Soc 125 and a 2-unit Support Course.**

- If you will take Math 114 or Math 117 with Support then you must *first* enroll in a section of Math 110C, then enroll in the corresponding Math 114 or Math 117; in particular, you are limited to enrolling in a section of Math 114 or Math 117 that is tied to a specific Math 110C.
- If you will take Psych 150 or Soc 125 with Support then you may enroll in *any* section of Psych 150 or Soc 125 and separately enroll in a section of SS 110C. Unlike the above, these sections are *not* directly tied together.
- If you chose **B** then you may *also* consider enrolling in **Math 74 (Pre-Algebra refresher).**