

## PSU Math 95/111 Placement Assessment

To start in MTH 111 you should have familiarity with problems like the ones below and you should be able to do most of them correctly. If you are unable to do these problems, then you should take the Math 70/95 placement assessment to see whether you should start with MTH 70 or MTH 95. The problems below are just a small sample of some of the skills and concepts covered in MTH 95. If you know that you have learned this material in the past and can do these problems with some review on your own, you may be able to prepare yourself for success in MTH 111 even though you missed several questions here. Or, you may find that starting in a math course that reviews some material is the best route for your long term success. For more thorough advising about which course you should take, please talk to someone in the math department.

1. Factor these polynomials:

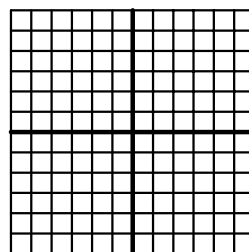
A)  $x^2 - 7x + 10$

B)  $2x^5 - 8x$

2. Find an equation for the line parallel to  $y = 3x + 1$  that goes through the point  $(0,5)$ .

3. a) Sketch a graph of  $y = x^2 - 3$

- b) Give the domain and range of this function.



4. Solve for x:  $x^2 + 5x + 6 = 0$

5. Add:

$$\frac{2}{x+3} + \frac{5}{x+2}$$

6. Multiply and write the product in simplest form:  $\frac{x^2 - 4x + 4}{3 - x} \cdot \frac{2x - 6}{x^2 - 4}$

7. Write an equivalent expression with as many factors as possible removed from under the radical:  $\sqrt{50x^6y^9}$

8. Use properties of exponents to simplify this expression:  $\frac{14(x^2y^3)^2}{7x^3y^{10}}$

9. If  $f(x) = 6 + 3x^2$ , find  $f(-5)$ .

10. *Set up and solve a system of equations to answer this question.* A theater sells adult tickets for \$8 and children's tickets for \$5. If a total of \$236 was taken in on sales of 34 total tickets, how many adult tickets and how many children's tickets were sold?