

Mth 85 Exam 1 Outcomes

NAME _____

After studying, place a checkmark next to those outcomes you feel you understand and/or are proficient with. Place a question mark next to those outcomes which you feel your skills/understanding is questionable. Turn in with your test.

To be successful in Mth 85 you should be able to ...

Basics

1. Know the basic vocabulary of mathematics at the pre-algebra level. e.g. radius, tenths, tens, etc
2. Know the common abbreviations in mathematics at the pre-algebra level. e.g. LCD, \approx , \neq , π , ft, in, rpm, etc
3. Perform basic calculations ($+$, $-$, \times , \div , a^n , $|a|$) with real numbers, decimals and fractions.
4. Solve basic applications involving real numbers, decimals and fractions.
5. Use *order of operations* to perform extended calculations with parentheses, exponents, radicals.
6. Substitute values into formulas and evaluate the expression. e.g. $c = \sqrt{a^2 + b^2}$; $a = 3$, $b = 4 \rightarrow c = 5$
7. Compute the area and perimeter of: circles, triangles, rectangles, trapezoids and parallelograms.
8. Calculate volumes of simple solids: e.g. spheres, boxes, cylindrical shapes and pyramidal shapes.
9. Round decimal to a given fraction form. e.g. $0.56 \approx 9/16$
10. Apply the rules of exponents to simplify or evaluate expressions. e.g. $3^5 \times 3^4 = 3^9$, $10^{-3} = 1/10^3$, $(2x^2)^3 = 2^3 x^6$
11. Switch between decimal and scientific notation.
12. Evaluate expressions using scientific notation.
13. Substitute expressions into formulas and simplify the new expression. e.g. $A = \pi r^2$; $r = d/2 \rightarrow A = (1/4)\pi d^2$
14. Read/write values with significant digits correctly identified.
15. Read/write values using correct prefixes or abbreviations. e.g. 10^6 T = 1 million T = 1 Megaton = 1 MT
16. Apply the rules of rounding and approximate values in calculations with addition and subtraction.
17. Apply the rules of rounding and approximate values in calculations with multiplication and division.
18. Apply the rules of rounding and approximate values when evaluating expressions/formulas.
19. Plot/read (x, y) coordinates on a graph.
20. Interpret the behavior inherent in a graph.

Measurement (include US, metric)

1. Understand and correctly apply the notation & vocabulary of US and metric measurements.
2. Know the basic units of US Standard measurement and be able to convert to alternate units.
3. Know the basic units of metric measurement and be able to convert to alternate units.
4. Change between ft-in (with fractional inches) and decimal representations. e.g. $42' 9 \frac{3}{8}" \leftrightarrow 42.78125'$
5. Add/subtract/multiply divide units of measurement. e.g. $4' 3 \frac{3}{8}" + 5' 9 \frac{3}{4}"$; $4' 3 \frac{3}{8}" \times 5' 9 \frac{3}{4}"$
6. Change between alternate units of compound measurement. e.g. cfs \rightarrow gpm; cu-in/hr \rightarrow cu-ft/sec
7. Reduce formulas/expressions to a single value with simplified units. e.g. $r = 15"$, $h = 3' 6"$, $A = 2\pi rh \approx 27.5$ ft²
8. Change between alternate prefixes for units. e.g. 2.5 Mw \rightarrow 2,500 Kw

Direct Proportion

1. Find equivalent fractions/ratios. e.g. $3/5 = x/10$
2. Setup and solve direct proportions.