

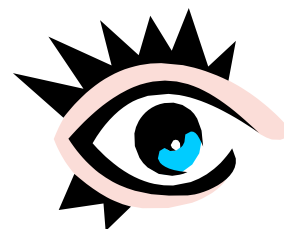
# North Carolina Early Mathematics Placement Testing Program –

Providing a Timely Reality Check of Readiness for College-Level Mathematics

2014-2015 NC EMPT Test Version

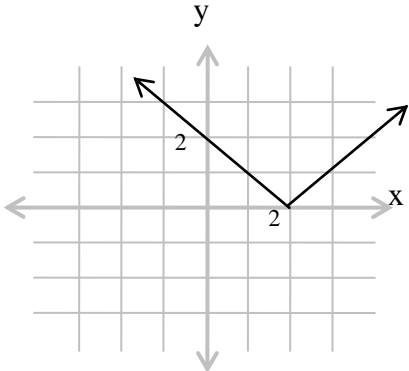
**26,464** high school student participants

## TOP 10 MISSED Questions

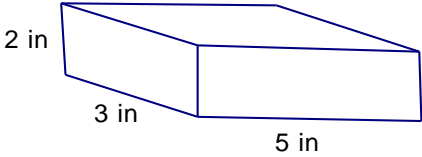


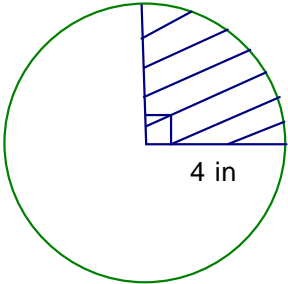
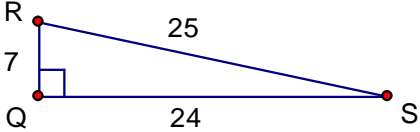
These questions are typical of those found on actual college math placement exams throughout the UNC System, NC community colleges, and other private colleges and universities. The questions are formatted for use on an overhead projector or document camera as a quick review or warm-up exercise for high school students in Algebra II, Math III, Essentials for College Math, Advanced Functions and Modeling, Precalculus, Discrete Math, Statistics, and other upper-level math courses. A [pdf of this document](#) can be located at [www.ncempt.org](http://www.ncempt.org). **Practice Makes Perfect!!**

Top Ten Missed	Students Answering <b>INCORRECTLY</b>	Test Item, 2014-2015 NC EMPT Test Version
1.	54%	Solve for $x$ : $2^x = \frac{2^a 2^b}{2^c}$ . A. $2^{\frac{ab}{c}}$ B. $2^{ab-c}$ C. $\frac{ab}{c}$ D. $\frac{a+b}{c}$ E. $a+b-c$

Top Ten Missed	Students Answering <b>INCORRECTLY</b>	Test Item, 2014-2015 NC EMPT Test Version										
2.	48%	<p>In the given table, the number of tigers at Zoo A is shown for various years. What is the percentage increase from 1990 to 2000?</p> <p style="text-align: center;">Tiger Population at Zoo A</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>Year</th> <th>1970</th> <th>1980</th> <th>1990</th> <th>2000</th> </tr> </thead> <tbody> <tr> <td>Number of Tigers</td> <td>0</td> <td>8</td> <td>4</td> <td>12</td> </tr> </tbody> </table> <p>A. 50%                      B. 100%                      C. 150%</p> <p>D. 200%                      E. 300%</p>	Year	1970	1980	1990	2000	Number of Tigers	0	8	4	12
Year	1970	1980	1990	2000								
Number of Tigers	0	8	4	12								
3.	45%	<p>What is the equation of the inverse of the function <math>x + 2y + 3 = 0</math>?</p> <p>A. <math>y = -\frac{1}{2}x - \frac{3}{2}</math>                      B. <math>y = -2x - 3</math></p> <p>C. <math>-x - 2y - 3 = 0</math>                      D. <math>x + 2y + 3 = 0</math></p> <p>E. <math>2x - y + 3 = 0</math></p>										
4.	44%	<p>Find the range of the function in the given graph.</p> <p>A. <math>y \geq 0</math>                      B. <math>y \geq 2</math></p> <p>C. <math>y &gt; 0</math>                      D. <math>x \geq 0</math></p> <p>E. all real numbers</p> 										

Need more information about the **FREE** services provided by the NC EMPT Program? Contact Ellen Hilgoe, Associate Director, at 252-328-6418 OR e-mail at [ncempt@ncempt.org](mailto:ncempt@ncempt.org). NC EMPT is sponsored by the State of North Carolina and is proudly housed at East Carolina University.

Top Ten Missed	Students Answering <b>INCORRECTLY</b>	Test Item, 2014-2015 NC EMPT Test Version
5.	42%	<p>This block of wood is a rectangular prism. What is the surface area of the block?</p> <p>A. <math>16 \text{ in}^2</math>      B. <math>25 \text{ in}^2</math>  C. <math>30 \text{ in}^2</math>      D. <math>38 \text{ in}^2</math>  E. <math>62 \text{ in}^2</math></p> 
6.	39%	<p>The absolute value equation <math> x - 2  = 3</math> has two solutions. What is the <u>sum</u> of these solutions?</p> <p>A. <math>-4</math>              B. <math>-1</math>              C. <math>0</math>  D. <math>4</math>                 E. <math>6</math></p>
7.	38%	<p>Simplify the expression: <math>\frac{1}{3 + \sqrt{5}}</math></p> <p>A. <math>\frac{3 - \sqrt{5}}{8}</math>              B. <math>\frac{3 + \sqrt{5}}{13}</math>              C. <math>\frac{\sqrt{5}}{8}</math>  D. <math>\frac{3 - \sqrt{5}}{4}</math>                 E. <math>-\frac{3\sqrt{5}}{2}</math></p>
8.	37%	<p>How high up on a building will a 15-foot ladder reach if the bottom of the ladder is placed 5 feet from the base of the building?</p> <p>A. <math>2\sqrt{10}</math> ft              B. <math>\sqrt{55}</math> ft              C. <math>10</math> ft  D. <math>10\sqrt{2}</math> ft              E. <math>5\sqrt{10}</math> ft</p>

Top Ten Missed	Students Answering <b>INCORRECTLY</b>	Test Item, 2014-2015 NC EMPT Test Version
9.	37%	<p>Find the area of the shaded region of the circle in square inches. Leave your answer in terms of <math>\pi</math>.</p> <p>A. <math>2\pi</math>                      B. <math>4\pi</math>  C. <math>8\pi</math>                        D. <math>10\pi</math>  E. <math>16\pi</math></p> 
10.	36%	<p>In the given right triangle, <math>\triangle QRS</math>, which equation would correctly find the angle of elevation from point S to point R?</p> <p>A. <math>\tan S = \frac{7}{24}</math>                      C. <math>\cos S = \frac{24}{7}</math>  B. <math>\sin S = \frac{24}{25}</math>                      D. <math>\cos S = \frac{7}{24}</math>  E. <math>\tan S = \frac{24}{7}</math></p> 

The average score for the 26,464 high school participants on the 2014-2015 NC EMPT test version was 15.6 out of 32 questions, or 49%.

**Correct Answers to the Top Ten Missed Questions, 2014-2015:**

1. E    2. D    3. B    4. A    5. E    6. D    7. D    8. D    9. B    10. A

EVERYONE benefits: high school students, teachers, administrators, and parents:

**Visit us at: [www.ncempt.org](http://www.ncempt.org)**

for a wealth of information about college mathematics placement testing!