

Here are the answers (in red) for the MBA Math Diagnostic test study guide:

1. Arithmetic operations with positive and negative numbers:

Ex: $-5 - 6$; $(-5)(-6)$; $-5 + 6$; $5(-6)$; etc
 -11 ; 30 ; 1 ; -30

2. Order of operations in arithmetic calculations:

Ex $10 - 6 \cdot 3^2$ -44

3. Simplify algebraic expressions:

Ex. $4x - 2 + 7x + 5$; $11x + 3$
 $(9x + 4) - (2x - 8)$; $7x + 12$
 $4x(3x + 2)$; $12x^2 + 8x$
 $(2x + 1)(6x - 3)$; etc $12x^2 - 3$

4. Use the properties of exponents to simplify:

Ex. 3^4 81
 $8^{2/3}$ 4 ; $25^{1/2}$ 5
 x^{-2} $1/x^2$; 2^{-3} $1/8$;
 $(3x^2)^4$ $81x^8$
 $x^8 \div x^2$; etc. x^6

5. Solve quadratic equations:

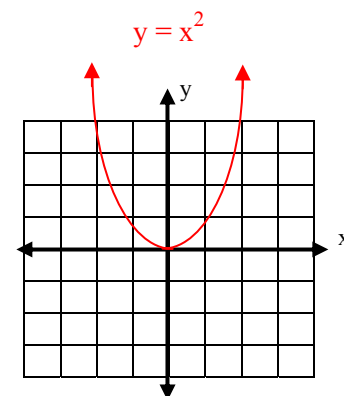
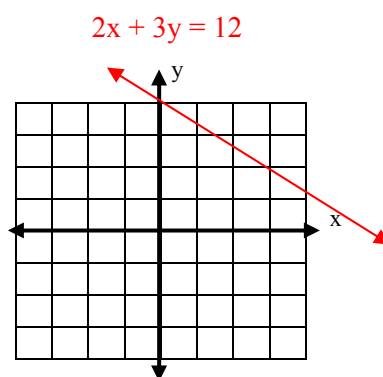
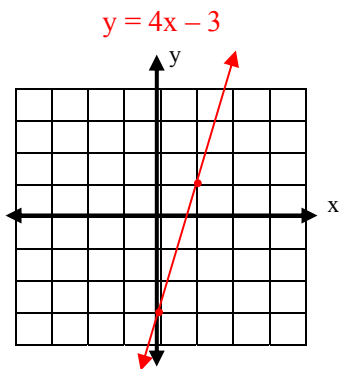
Ex: $x^2 - 8x + 12 = 0$; $x = 2, 6$
 $9x^2 = 16$; etc. $x = \pm 4/3$

6. Evaluate "sigma" expressions;

Ex. $\sum_{a=4}^7 (a + 5)$ 42

7. Sketching graphs;

Ex. $y = 4x - 3$;
 $2x + 3y = 12$;
 $y = x^2$; etc.



8. Solve a system of linear equations;

Ex. $\begin{cases} 2x + y = 21 \\ x - 2y = 3 \end{cases}$ $x = 9$ $y = 3$

9. Given two points on a line, write the equation of the line in $y = mx + b$ form;

Ex. Write the equation of the line that passes through the points (1, 5) and (3, 9) $y = 2x + 3$

10. Evaluate factorial notation;

Ex. $5!$ 120
 $8! \div 6!$ etc. 56

11. Work with formulas:

Ex. Find A if $A = Pe^{rt}$ where $P = \$1,000$,
 $r = 4.2\%$, and $t = 3$ years. (Note: $e \approx 2.72$)
 $A = \$1134.28$