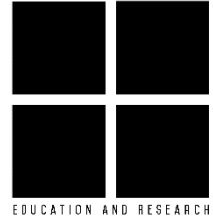




UP SCHOOL OF STATISTICS STUDENT COUNCIL

Education and Research



erho.weebly.com | erhomyhero@gmail.com | /erhoismyhero | @erhomyhero

Mathematics 17
First Long Examination

M17_LE1_001
College Algebra and Trigonometry
First Semester AY 2012-2013

I. Write TRUE if the statement is always true, otherwise, write FALSE.

1. For any number z , $z^0 = 1$.
2. If $a \in \mathbb{R}$, $m, n \in \mathbb{N}$ and $a^m = a^n$, then $m = n$.
3. If $A, B \subseteq X$ and $A \subseteq B$, then $X \setminus B \subseteq X \setminus A$.
4. For any $x, y, z \in \mathbb{R}$, $\frac{x}{y} + \frac{x}{z} = \frac{x}{y+z}$.
5. The equation $x + (y + z) = (y + z) + x$ is true because of the associative axiom for addition.
6. For $A \subset B$ with $n(A) = p$ and $n(B) = q$, we have $n(A \times B) < pq$.

II. Fill in the blanks.

1. If $A = \{x \in \mathbb{R} : |x| \leq 6\}$ and $B = \{x \in \mathbb{R} : |x| \leq 1\}$ then $B - A =$ _____.
2. The quotient when $x^4 - 3$ is divided by $x^2 + 4x - 5$ is _____.
3. In completely factored form, $4n^2 - 6n - 4nm + 6m =$ _____.
4. The factors of $81a^8 + 4a^4b^8$ are _____.
5. In simplified form, $\frac{3}{\sqrt[3]{-54}} + \sqrt[6]{16} =$ _____.
6. The imaginary part of $\left(\frac{\bar{1}}{3 - 4i}\right)$ is _____.

III. Do as indicated.

1. Simplify: $\left(\frac{m-1}{2m^2-3m-2} - \frac{m}{m^2-4}\right) \div \frac{m^2+2}{2m^3+5m^2+2m}$.

2. Simplify: $1 - \frac{1-x}{1 - \frac{1+x}{1-x}}$.

3. Simplify: $\frac{1}{a} \sqrt[3]{27a^4b^2} + b \sqrt[3]{\frac{-8a}{b}}$.

4. Express the following in rectangular form: $\frac{(5+i^{-7})(3-i^{99})}{(5-i^{-3})(3+i^{11})}$.

END OF EXAM