Show all work to receive full credit. Supply explanations when necessary.

1. (1 point) Let $A = \{x, y\}$ and $B = \{a, b, c\}$. Find $B \times A$.

2. (1 point) Shade the portion of a two-set Venn diagram that corresponds to $\overline{A} \cap B$.

3. (1 point) Use a two-set Venn diagram to help you determine n(A) if $n(A \cup B) = 22$, $n(A \cap B) = 8$, and n(B) = 12.

4. (1 point) Convert 2032_{four} to base ten.

5. (1 point) Write the first ten counting numbers in base three.