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

1. (1 point) State one of the important properties of the Hindu-Arabic numeration system.

   ① Each numeral is constructed using 10 basic digits: 0, 1, 2, 3, 4, 5, 6, 7, 8, 9

   ② Place value is based on powers of 10: $10^0, 10^1, 10^2, \ldots$

2. (1 point) Find the base-ten equivalent of the base-five numeral 342_{five}.

   $$3 \times 5^2 + 4 \times 5^1 + 2 \times 5^0$$
   $$= 3 \times 25 + 4 \times 5 + 2$$
   $$= 75 + 20 + 2 = \boxed{97_{\text{TEN}}}$$

3. (1 point) List the first 10 natural numbers in base three.

   $$1, 2, 10, 11, 12, 20, 21, 22, 100, 101, \ldots$$

   All in base three

4. (2 points) Find the base-seven equivalent of the base-ten numeral 1842.

   $$7^0 = 1, \quad 7^1 = 7, \quad 7^2 = 49, \quad 7^3 = 343, \quad 7^4 = 2401$$

   $7^3 = 343 \overline{)1842} \, (5$
   $\qquad\quad \underline{1715}$
   $7^2 = 49 \, \overline{)127} \, (2$
   $\qquad\quad \underline{98}$
   $7^1 = 7 \, \overline{)29} \, (4$
   $\qquad\quad \underline{28}$
   $7^0 = 1 \, \overline{)1} \, (1$

   $$1842_{\text{TEN}} = \boxed{5241_{\text{SEVEN}}}$$