Recall the Previously Shown Results from Ch. 1 and Section 3.2

Lemma SEE. If x is an even integer and y is an even integer, then $x + y$ is an even integer.
Lemma SEO. If x is an even integer and y is an odd integer, then $x + y$ is an odd integer.
Lemma SOO. If x is an odd integer and y is an odd integer, then $x + y$ is an even integer.
Lemma PEA. If x is an even integer and y is an integer, then $x \cdot y$ is an even integer.
Lemma POO. If x is an odd integer and y is an odd integer, then $x \cdot y$ is an odd integer.
Theorem 3.10. An integer n is even if and only if n^2 is even.
Corollary 3.10. An integer n is odd if and only if n^2 is odd.

After you finish this problem (i.e., ER 3.2.1), you may use it on **later** problems (i.e., problems after ER 3.2.1d). ER 3.2.1, as well as Theorem/Corollary 3.10, are used often in later problems.

►. **Theorem 3.2.1c**. An integer n is even if and only if n^3 is even.

Corollary 3.2.1d. An integer n is odd if and only if n^3 is odd.

1. Symbolically write Theorem 3.2.1c.
2. Prove Theorem 3.2.1c by using previous shown results (listed above).
3. Symbolically write Corollary 3.2.1d.
4. Prove Corollary 3.2.1d by using Theorem 3.2.1c and equivalent logical equivalence.

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