1 Exercise Set 1.1

My answers

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a. Is there an integer n such that n has a remainder of 2 when divided by 5, and a remainder of 3 when divided by 6 ?
b. Does there exist a number n, such that if n is divided by 5 the *remainder* is 2 and if n is divided by 6 the remainder is 3?

3. **Given any two distinct real numbers, there is a real number in between them**
a. Given any two distinct real numbers a and b, there is a real number c such that c is in between a and b. $(a < c > b)$
b. For any two real numbers a, b there is a real number in between, c such that c is between a and b.

4. **Given any real number, there is a real number that is greater.**
a. Given any real number r, there is another number s such that s is greater than r.
b. For any real number r, there is a real number s greater than r such that $s > r$.

5. **The reciprocal of any positive real number is positive.**
a. Given any positive real number r, the reciprocal of r is positive.
b. For any real number r, if r is positive, then its reciprocal is positive.
c. If a real nubmer r is positive, then the reciprocal of r is positive.

6. **The cube root of any negative real number is negative.**
a. Given any negative real number s, the cube root of s is negative.
b. For any real number s, if s is negative, then the cube root of s is negative.
c. If a real number s is negative, then s cube root is negative.

7. **Rewrite the following statements less formally, without using variables. Determine, as best as you can, whether the statements are true or false.** a. False, if $u < v$, then $u + v > u - v$
b. True
c. True, take for example $n = 1$, $1^2 = 1 \geq 1$
d. True.