1. The Truth Of It All

Exercises

1.1 Which of the following are mathematical statements?

(a) $ax^2 + bx + c = 0$
A mathematical statement.

(b) $(-b + \sqrt{b^2 - 4ac})/2a$
Not a statement

(c) Triangle XYZ is similar to triangle RST.
A statement.

(d) $3 + n + n^2$
Not a statment.

(e) For every angle t, $\sin^2(t) + \cos^2(t) = 1$.
A statement.

1.2 Which of the following are mathematical statements?

(a) There is an even integer n that, when divided by 2, is odd.
A statement.

(b) integers n such that n is even.
A statement.

(c) If x is a positive real number, then $\log 10(x) > 0$.
A statement.

(d) $\sin(\Pi/2) < \sin(\Pi/4)$.
A statement.

1.3 For each of the following problems, identify the hypothesis (what you can assume is true) and the conclusion (what you are trying to show is true).

1.1

a.

A mathematical statement.