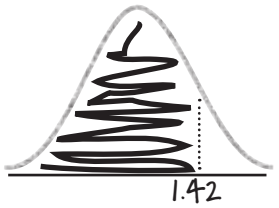
Sharpen your pencil Solution

It's time to put your probability table skills to the challenge. See if you can solve the following probability problems.

1. P(Z < 1.42)

We can find this probability by looking up 1.42 in the probability tables. This gives us

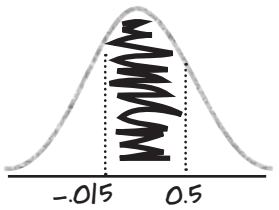
$$P(Z < 1.42) = 0.9222$$



2. P(-0.15 < Z < 0.5)

For this one, look up P(Z < 0.5), and subtract P(Z < −0.15)

$$P(-0.15 < Z < 0.5 = P(Z < 0.5) - P(Z < -0.15)$$
$$= 0.6915 - 0.4404$$
$$= 0.2511$$



3. P(Z > z) = 0.1423. What's z?

This is a slightly different problem. We're given the probability, and need to find the value of z.

We know that P(Z > z) = 0.1423, which means that

$$P(Z < z) = 1 - 0.1423$$
$$= 0.8577$$

The next thing to do is find which value of z has a probability of 0.8577. Looking this up in the probability tables gives us

$$z = 1.07$$

so

$$P(Z > 1.07) = 0.1423$$