For $p$, SE, $z$, $p$-value, acceptance regions, show both the final answer and the unsimplified formula answer. E.g.,

$$p = \frac{50 + 60}{100 + 100} = .55$$

$$SE = \sqrt{(\frac{.55}{100} + \frac{.45}{100})} = .0704$$

$$z = \frac{50}{100} - \frac{60}{100} / .0704 = -1.4213$$

$$p$-value = $2P(z < -1.42) \approx 2(.5 - .4222) = .1556 = 15.56\%$$

9.34(7). Independent random samples are selected from binomial populations 1 and 2 respectively. Sample 1 has $n_1 = 140$ elements with $x_1 = 74$ successes. Sample 2 has $n_2 = 140$ elements with $x_2 = 81$ successes. 1% signif.

(a) You don’t have any reason to believe one population mean is larger than the other; you just want to determine if they differ. What are your null and alternative hypotheses?

$H_a:$

$H_0:$

(b) Find the pooled estimate for the combined proportion $p$. Then estimate the standard error for the difference $\hat{p}_1 - \hat{p}_2$ in the sample proportions.

$$p = \ldots \ldots 19$$

(c) $SE \approx \ldots \ldots 18$

(d) Accept region: $\hat{p}_1 - \hat{p}_2 \in$

Note: $\alpha = .01$

(e) $\hat{p}_1 - \hat{p}_2 = \ldots \ldots 5$

(f) $z = \ldots \ldots 12$

(g) The 1% acceptance region for the $z$-values.

(h) $p$-value = $\ldots \ldots 4$

(i) The 1% acceptance region for the $p$-values.

(j) At 1% significance, should you accept or reject the null hypothesis?

9.38(6). The following data compares the employment rate of homeless men with the rate for men with homes but using a meal program. Is there an $\alpha = 1\%$ significant difference?

<table>
<thead>
<tr>
<th></th>
<th>Homeless</th>
<th>Domiciled</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sample size</td>
<td>112</td>
<td>260</td>
</tr>
<tr>
<td>Number working</td>
<td>34</td>
<td>98</td>
</tr>
<tr>
<td>Sample proportion</td>
<td>0.30</td>
<td>0.38</td>
</tr>
</tbody>
</table>

(a) $H_a:$

$H_0:$

(b) Pooled $p = \ldots \ldots 20$

(c) $SE \approx \ldots \ldots 17$

(d) $z = \ldots \ldots 10$

(e) Rejection region for $z$-scores:

(f) Is there an $\alpha = 1\%$ significant difference?

10.2(4). For each $\alpha$ and given number $df$ of degrees of freedom, find the acceptance region for $t$.

(a) Two-tailed test, $\alpha = .01$, $df = 12$. 26

(b) Right-tailed test, $\alpha = .05$, $df = 16$. 18

(c) Two-tailed test, $\alpha = .05$, $df = 25$. 16

(d) Left-tailed test, $\alpha = .01$, $df = 7$. 28