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STAT 3093, ASSIGNMENT #7

G3: Ex 38 b, c ; Pg 509

b) No, it is necessary to have the sample standard deviations as well.

c) $$s_p^2 = \frac{m-1}{m+n-2} s_1^2 + \frac{n-1}{m+n-2} s_2^2$$

$$= \frac{15-1}{15+19-2} 19.5^2 + \frac{19-1}{15+19-2} 15.37^2 = 299.24$$

$$t = \frac{\bar{x} - \bar{y} - (m_1 - m_2)}{\sqrt{s_p^2 \left(\frac{1}{m} + \frac{1}{n}\right)}} = \frac{30.47 - 26.53}{\sqrt{299.24 \left(\frac{1}{15} + \frac{1}{19}\right)}} = 0.659$$

$H_0 = \mu_1 - \mu_2 = 0$

$H_a = \mu_1 - \mu_2 > 0$

tail area = 0.742 using $df = m - n - 2$

$P = 1 - 0.742 = 0.257$

The evidence does not allow us to reject the null hypothesis, which states that there is no difference between the time consumers look at the products, unless a significance of > 0.257 is acceptable.