## Agronomy 526 Homework

## Due: 4/21/22

1. The following data are from an oat variety trial that was conducted over two years at three locations. The experimental design was a RCBD with three replications.

Location	Kanawha							Ames							Washington						
Yr / Rep	1985			1986			1985			-	1986			1985			_	1986			
Variety	1	2	3	1	2	3	1	2	3		1	2	3	1	2	3		1	2	3	
Richland	42	51	49	47	48	49	32	49	51		36	32	37	53	54	50		35	35	31	
Cherokee	36	32	44	39	42	44	44	41	44		38	43	38	55	47	47		37	29	36	
E77	39	42	43	41	48	42	42	48	43		39	53	42	51	53	48		38	38	43	
Larry	48	46	50	52	49	49	52	49	47		44	47	43	50	52	48		48	50	43	
Lang	50	48	52	45	48	52	49	51	50		46	44	44	53	52	52		44	48	49	
Proat	42	41	46	45	44	41	51	51	47		40	41	42	45	42	44		40	38	28	
Ogle	47	49	46	48	46	50	52	49	47		42	43	42	51	51	47		47	50	49	
Porter	50	49	52	41	43	42	54	49	46		48	46	38	47	46	51		41	42	38	
Don	50	47	45	52	51	45	53	57	52		49	50	50	52	52	57		46	50	49	
Hytest	45	46	43	45	40	44	47	45	41		38	42	53	49	46	47		40	37	33	
E77 Larry Lang Proat Ogle Porter Don Hytest	<ul> <li>39</li> <li>48</li> <li>50</li> <li>42</li> <li>47</li> <li>50</li> <li>50</li> <li>45</li> </ul>	<ul> <li>42</li> <li>46</li> <li>48</li> <li>41</li> <li>49</li> <li>49</li> <li>47</li> <li>46</li> </ul>	43 50 52 46 46 52 45 43	<ul> <li>41</li> <li>52</li> <li>45</li> <li>45</li> <li>48</li> <li>41</li> <li>52</li> <li>45</li> </ul>	42 48 49 48 44 46 43 51 40	42 49 52 41 50 42 45 44	42 52 49 51 52 54 53 47	48 49 51 51 49 49 57 45	43 47 50 47 47 46 52 41		<ul> <li>39</li> <li>44</li> <li>46</li> <li>40</li> <li>42</li> <li>48</li> <li>49</li> <li>38</li> </ul>	<ul> <li>43</li> <li>53</li> <li>47</li> <li>44</li> <li>41</li> <li>43</li> <li>46</li> <li>50</li> <li>42</li> </ul>	42 43 44 42 42 42 38 50 53	50 51 50 53 45 51 47 52 49	<ul> <li>53</li> <li>52</li> <li>52</li> <li>42</li> <li>51</li> <li>46</li> <li>52</li> <li>46</li> <li>52</li> <li>46</li> </ul>	48 48 52 44 47 51 57 47		<ul> <li>38</li> <li>48</li> <li>44</li> <li>40</li> <li>47</li> <li>41</li> <li>46</li> <li>40</li> </ul>	<ol> <li>38</li> <li>50</li> <li>48</li> <li>38</li> <li>50</li> <li>42</li> <li>50</li> <li>37</li> </ol>	<ul> <li>43</li> <li>43</li> <li>49</li> <li>28</li> <li>49</li> <li>38</li> <li>49</li> <li>33</li> </ul>	

- a. perform the analysis of variance on each year/location.
- b. determine if the variances are homogeneous across years/locations.
- c. write the expected mean squares for the combined analysis.
- d. perform the analysis of variance for the combined experiment.
- e. interpret the results making sure to explain any interactions.
- \* turn in your SAS program as well as output