The significance level is $\alpha = 0.05$.

Step 1: Use technology to obtain ANOVA results, such as one of those shown in the accompanying displays.

STATDISK

Source: Treatment:	DF:	SS: 2022.729906	MS: 1011.364953	Test Stat, F: 4.071122	Critical F: 3.073087	P-Value: 0.01951
Error:	118	29314.046953	248.424127			
Total:	120	31336.77686				

MINITAB

Source	DF	SS	MS	F	P	
Factor	2	2023	1011	4.07	0.020	
Error	118	29314	248			
Total	120	31337				

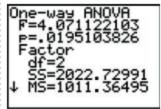
EXCEL

ANOVA						
Source of Variation	55	df	MS	,	P-value	Forit
Between Groups	2022.729906	2	1011.364953	4.071122108	0.019510883	8.078090341
Within Groups	29814.04695	118	248.4241267			
Total	31336.77686	120				

STATCRUNCH

Source	ctf	SS	MS	F-Stat	P-value
Treatments	2	2022.7299	1011.3649	4.071122	0.0195
Error	118	29314.047	248.42413		
Total	120	31336.777			

TI-83/84 PLUS



SPSS

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	2022.730	2	1011.365	4.071	.020
Within Groups	29314.047	118	248.424		
Total	31336.777	120			

JMP

Source	DF	Sum of Squares	Mean Square	F Ratio
Model	2	2022.730	1011.36	4.0711
Error	118	29314.047	248.42	Prob > F
C. Total	120	31336.777		0.0195*

Step 2: The displays all show that the *P*-value is 0.020 when rounded.

Step 3: Because the *P*-value of 0.020 is less than the significance level of $\alpha = 0.05$, we reject the null hypothesis of equal means. (If the *P* is low, the null must go.)

Interpretation

There is sufficient evidence to warrant rejection of the claim that the three samples come from populations with means that are all equal. Based on the samples of measurements listed in Table 12-1, we conclude that those values come from populations having means that are not all the same. On the basis of this ANOVA test, we cannot conclude that any particular mean is different from the others, but we can informally note that the sample mean for the low blood lead group is higher than the means for the medium and high blood lead groups. It appears that greater blood lead levels are associated with lower performance IQ scores.