

	type: colab or handwritten	similar exercise		
homework				
ex.4.1.1.a	handwritten or typed	ex.4.1.1.b	ex.4.1.1.b PDF solution	<a href="https://langou.github.io/4650/4.1/exercise_ex_4_1_01_b_sauer3/exercise_ex_4_1_01_b_sauer3_sol_langou.pdf">https://langou.github.io/4650/4.1/exercise_ex_4_1_01_b_sauer3/exercise_ex_4_1_01_b_sauer3_sol_langou.pdf</a>
ex.4.1.1.c			ex.4.1.1.b colab helper	<a href="https://colab.research.google.com/drive/1QmINOUhGT-_UtSpXUJ9VSGUpDS99kDly">https://colab.research.google.com/drive/1QmINOUhGT-_UtSpXUJ9VSGUpDS99kDly</a>
ex.4.1.2.a	handwritten or typed	ex.4.1.2.b	ex.4.1.1.b PDF solution	<a href="https://langou.github.io/4650/4.1/exercise_ex_4_1_02_b_sauer3/exercise_ex_4_1_02_b_sauer3_sol_langou.pdf">https://langou.github.io/4650/4.1/exercise_ex_4_1_02_b_sauer3/exercise_ex_4_1_02_b_sauer3_sol_langou.pdf</a>
			ex.4.1.1.b colab helper	<a href="https://colab.research.google.com/drive/19z_bgBQjCaLlOA_0w3p6_K4Dg8edxCQRm">https://colab.research.google.com/drive/19z_bgBQjCaLlOA_0w3p6_K4Dg8edxCQRm</a>
ex.4.1.8.b	handwritten or typed	ex.4.1.8.a	ex.4.1.8.a PDF solution	<a href="https://langou.github.io/4650/4.1/exercise_ex_4_1_08_a_sauer3/exercise_ex_4_1_08_a_sauer3_sol_langou.pdf">https://langou.github.io/4650/4.1/exercise_ex_4_1_08_a_sauer3/exercise_ex_4_1_08_a_sauer3_sol_langou.pdf</a>
			ex.4.1.8.a colab helper	<a href="https://colab.research.google.com/drive/1-t_9FiXuS5PlzpZeB3vVY6ixL5_6hf4d">https://colab.research.google.com/drive/1-t_9FiXuS5PlzpZeB3vVY6ixL5_6hf4d</a>
ex.4.1.9.b	handwritten or typed	ex.4.1.9.a	ex.4.1.9.a PDF solution	<a href="https://langou.github.io/4650/4.1/exercise_ex_4_1_09_a_sauer3/exercise_ex_4_1_09_a_sauer3_sol_langou.pdf">https://langou.github.io/4650/4.1/exercise_ex_4_1_09_a_sauer3/exercise_ex_4_1_09_a_sauer3_sol_langou.pdf</a>
			ex.4.1.9.a colab helper	<a href="https://colab.research.google.com/drive/1_rkgIFPEyktaBG3zKfu6q0lIKwVdZTo8">https://colab.research.google.com/drive/1_rkgIFPEyktaBG3zKfu6q0lIKwVdZTo8</a>
cp.4.1.5	colab		getting started	<a href="https://colab.research.google.com/drive/13gw6Vwiz6cQjx3lEIAJtnxC6vhabWkv">https://colab.research.google.com/drive/13gw6Vwiz6cQjx3lEIAJtnxC6vhabWkv</a>
cp.4.2.6	handwritten or typed	cp.4.2.6	cp.4.2.6 colab that you need to explain, see questions in PDF	<a href="https://colab.research.google.com/drive/1KQChAXtFm-tQmbe9GvaHJPkkNDliarVY">https://colab.research.google.com/drive/1KQChAXtFm-tQmbe9GvaHJPkkNDliarVY</a>
cp.4.2.7	handwritten or typed	cp.4.2.7	cp.4.2.7 colab that you need to explain, see questions in PDF	<a href="https://colab.research.google.com/drive/1DJfK_hsx23jIX1GF4BFuaNKCLG7FoeO">https://colab.research.google.com/drive/1DJfK_hsx23jIX1GF4BFuaNKCLG7FoeO</a>
cp.4.2.8	handwritten or typed	cp.4.2.8	cp.4.2.8 colab that you need to explain, see questions in PDF	<a href="https://colab.research.google.com/drive/15l78g98Fkzl65f_C2uqjC8WCBzK3lqT-">https://colab.research.google.com/drive/15l78g98Fkzl65f_C2uqjC8WCBzK3lqT-</a>
cp.4.2.9	both: ( colab ) and ( handwritten or typed )	cp.4.2.9	cp.4.2.9 getting started see handwritten question in PDF	<a href="https://colab.research.google.com/drive/1juTBIIQWf06NjXEzScfy2Cnc4MPUJOS-">https://colab.research.google.com/drive/1juTBIIQWf06NjXEzScfy2Cnc4MPUJOS-</a>
ex.4.3.2.b	handwritten or typed	ex.4.3.2.a	ex.4.3.2.a PDF solution	<a href="https://langou.github.io/4650/4.3/exercise_ex_4_3_02_sauer3/exercise_ex_4_3_02_a_sauer3_sol_langou.pdf">https://langou.github.io/4650/4.3/exercise_ex_4_3_02_sauer3/exercise_ex_4_3_02_a_sauer3_sol_langou.pdf</a>
			ex.4.3.2.a colab helper	<a href="https://colab.research.google.com/drive/1oezRRxhJYGH0nXGsb16oBf34wQo4TKhV">https://colab.research.google.com/drive/1oezRRxhJYGH0nXGsb16oBf34wQo4TKhV</a>
ex.4.3.7.b	handwritten or typed	ex.4.3.7.a	ex.4.3.7.a PDF solution	<a href="https://langou.github.io/4650/4.3/exercise_ex_4_3_07_sauer3/exercise_ex_4_3_07_a_sauer3_sol_langou.pdf">https://langou.github.io/4650/4.3/exercise_ex_4_3_07_sauer3/exercise_ex_4_3_07_a_sauer3_sol_langou.pdf</a>
			ex.4.3.7.a colab helper	<a href="https://colab.research.google.com/drive/18V9U-OvfbhAnIRA-FP34nMJoaMHC1tk">https://colab.research.google.com/drive/18V9U-OvfbhAnIRA-FP34nMJoaMHC1tk</a>
ex.4.3.8.b	handwritten or typed	ex.4.3.8.a	ex.4.3.8.a PDF solution	<a href="https://langou.github.io/4650/4.3/exercise_ex_4_3_08_sauer3/exercise_ex_4_3_08_a_sauer3_sol_langou.pdf">https://langou.github.io/4650/4.3/exercise_ex_4_3_08_sauer3/exercise_ex_4_3_08_a_sauer3_sol_langou.pdf</a>
			ex.4.3.8.a colab helper	<a href="https://colab.research.google.com/drive/1cw4J2CTjJaPGahWJB55ujNKJmtEE4h5M">https://colab.research.google.com/drive/1cw4J2CTjJaPGahWJB55ujNKJmtEE4h5M</a>
cp.4.3.6	colab	cp.4.3.5	cp.4.3.5 colab	<a href="https://colab.research.google.com/drive/1gZqZ_Yyel9qsaShbrqfhuQgDdJbG-Bfi">https://colab.research.google.com/drive/1gZqZ_Yyel9qsaShbrqfhuQgDdJbG-Bfi</a>
cp.4.5.1.b	colab	cp.4.5.1.a	cp.4.5.1.a colab	<a href="https://colab.research.google.com/drive/1yQlOFet1pjw8MRq1W6tNk-y6UGeTN0L1">https://colab.research.google.com/drive/1yQlOFet1pjw8MRq1W6tNk-y6UGeTN0L1</a>
cp.4.5.2.b	colab	cp.4.5.2.a	cp.4.5.2.a colab	<a href="https://colab.research.google.com/drive/1Yv1h2tU5i3rnBQI9hMOAcE03-w3MXndV">https://colab.research.google.com/drive/1Yv1h2tU5i3rnBQI9hMOAcE03-w3MXndV</a>
cp.4.5.3.b	colab	cp.4.5.3.a	cp.4.5.3.a colab	<a href="https://colab.research.google.com/drive/166Q9rVkcLleNyagrZSYjMF_X6Vy1ZGG_">https://colab.research.google.com/drive/166Q9rVkcLleNyagrZSYjMF_X6Vy1ZGG_</a>
cp.4.5.4.b	colab	cp.4.5.4.a	cp.4.5.4.a colab	<a href="https://colab.research.google.com/drive/1FnI-aiNY6Umxq6Mq2254K9rS5h-oR78w">https://colab.research.google.com/drive/1FnI-aiNY6Umxq6Mq2254K9rS5h-oR78w</a>
cp.4.5.8	colab	cp.4.5.7 cp.4.5.8	cp.4.5.7 colab cp.4.5.8 getting started	<a href="https://colab.research.google.com/drive/1EbhqzLTxqcl4fR5camz38xPzYHI75ATt">https://colab.research.google.com/drive/1EbhqzLTxqcl4fR5camz38xPzYHI75ATt</a> <a href="https://colab.research.google.com/drive/12nKlOitmSnSnm186CFsadxYghhUne3BQ">https://colab.research.google.com/drive/12nKlOitmSnSnm186CFsadxYghhUne3BQ</a>
cp.4.5.11.b	colab	cp.4.5.7 cp.4.5.11.b	cp.4.5.7 colab cp.4.5.11.b getting started	<a href="https://colab.research.google.com/drive/1EbhqzLTxqcl4fR5camz38xPzYHI75ATt">https://colab.research.google.com/drive/1EbhqzLTxqcl4fR5camz38xPzYHI75ATt</a> <a href="https://colab.research.google.com/drive/15twmsgidoJodiH7I9Mtb7ZQJ3GSmEd">https://colab.research.google.com/drive/15twmsgidoJodiH7I9Mtb7ZQJ3GSmEd</a>