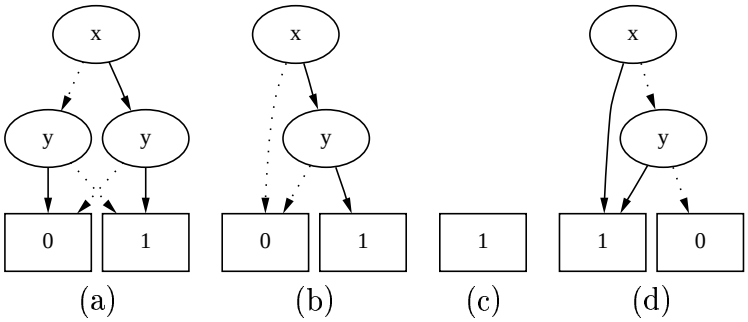
Problem 2 (35%)

Consider the following four BDDs.



The BDDs are each generated from one of the following expressions:

1. $x \wedge (x \Rightarrow y)$
2. $(x \wedge y) \vee ((x \wedge y) \Rightarrow z)$
3. $x \vee y$
4. $\neg x \Leftrightarrow y$
5. $\neg x \wedge \neg y$
6. $x \Leftrightarrow y$

Question 2.1

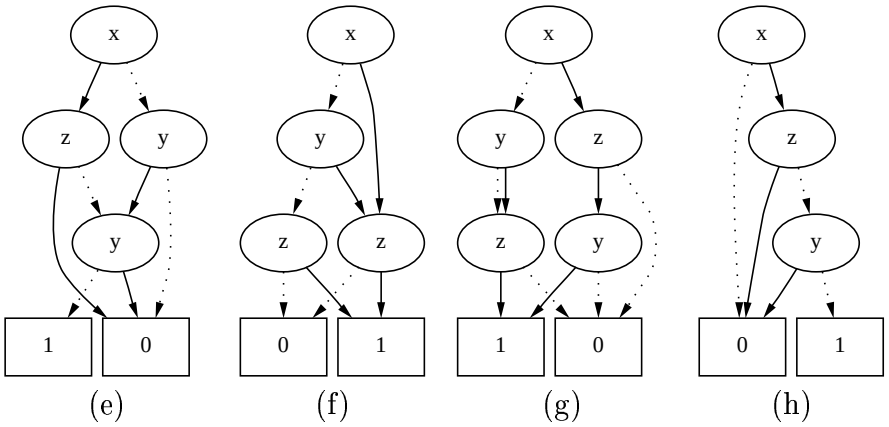
Show which BDD corresponds to which expression by filling in the table below:

BDD	a	b	c	d
Expression number				

Solution:

BDD	a	b	c	d
Expression number	6	1	2	3

Now, consider the following four BDDs.



Question 2.2

Which of the BDDs (e)–(h) are not ROBDDs, i.e., which are either not *ordered* or not *reduced*? Give you answer by filling in a table as below:

BDD	e	f	g	h
R				
O				

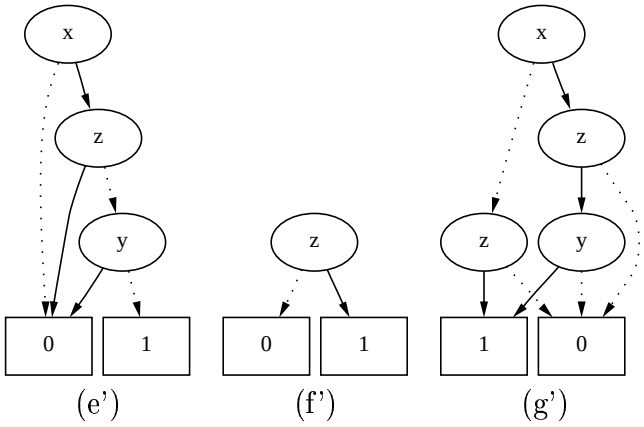
Solution:

BDD	e	f	g	h
R	+	-	-	+
O	-	+	-	+

Question 2.3

For each of the BDDs (e)–(h) that are not ROBDDs, give a variable order and show the corresponding ROBDD.

Solution: Corresponding ROBDDs for (e), (f), and (g) are:



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