

►. **Theorem 4.** For all integers $a, b,$ and d with $d \neq 0,$ if d divides a or d divides $b,$ then d divides the product $ab.$

1. Symbolically write Theorem 4.

2. Prove Theorem 4. Hint: Recall from our §2.2 handout of Logically Equivalent Statements that $[(P \vee Q) \implies R] \equiv [(P \implies R) \wedge (Q \implies R)].$ So we can prove $[(P \vee Q) \implies R]$ we can show that $P \implies R$ AND $Q \implies R.$

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DELETE this whole sentence and THEN put your answer to ALL parts down here.