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| 1. **5–63**The figure shows a shaft mounted in bearings at *A* and *D* and having pulleys at *B* and *C*. The forces shown acting on the pulley surfaces represent the belt tensions. The shaft is to be made of AISI 1035 CD steel. Using a conservative failure theory with a design factor of 2, determine the minimum shaft diameter to avoid yielding. |  |

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| 73) A solid steel shaft has a gear with ASTM grade 20 cast-iron hub (*E =* 14.5 Mpsi) shrink-fitted to it.  The shaft diameter is 2.001 +/- 0.0004 in. The specifications for the gear hub are |  |

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