

In this test, the questions relate to the common drilling operations - spot drilling, drilling and tapping. In the first part, answer the general questions. The questions in the second part relate to the enclosed drawing. The objective of this exercise is to evaluate the questions and/or the drawing and provide correct answers.

➔ PART 1 - GENERAL QUESTIONS

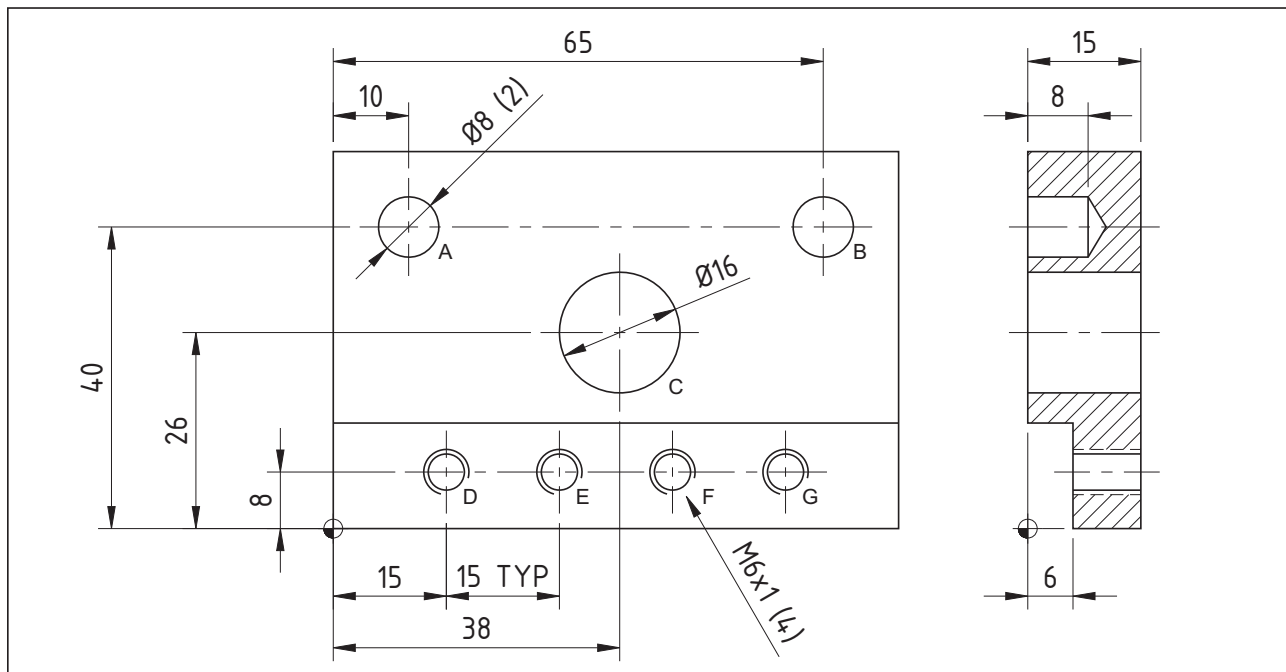
1. Specify formula to calculate any spot drill depth: _____
2. What is the drill point length for $\varnothing 1/2$ drill with point angle of 135° ? _____
3. What is a reasonable metric chamfer used for deburring? _____
4. What is the constant used for drill length calculation for 118° tool point angle? _____
5. Define a tap drill:

6. Define a chamfer diameter:

7. What is the formula to calculate a tool point length of a drill with 118° tool point angle?

8. What is a reasonable amount of breakthrough for $1/2$ -13 tap? _____
9. What is the most common included angle of the standard drill point? _____
10. In spot drilling, what is the relationship of the chamfer diameter and the Z-depth?

➡ PART 2 - DRAWING RELATED QUESTIONS



Based on the drawing above, answer the following questions:

11. What is the programmed depth of holes A and B? _____
12. If spindle speed for the tap is 560 r/min, what will the feedrate be? _____
13. With a 2 mm breakthrough, what is the programmed depth of hole C? _____
14. If 2,5 mm is required as a clearance, what is the R-level for spot drilling of holes D-G? _____
15. Specify the X-coordinate of the hole F _____
16. For holes A and B, the required chamfer is 0,35 mm - what is the depth of spot drill? _____
17. What is the pitch of the tap for holes D-G? _____

18. Which cycle will be used for spot drilling? _____
19. Calculate the chamfer diameter for the tapped holes _____
20. Based on the answer in question 20, what will be the spot drill depth? _____
21. Specify the tap drill size for holes D-G _____
22. If a spot drill requires exactly 3 spindle revolutions, what is the dwell for 685 r/min? _____
23. Calculate spindle speed in r/min for 27 m/min surface speed and 16 mm drill _____
24. What is the drill point length of the tap drill? _____
25. Enter the complete program for tapping the four holes D-G (tapping only - use tool #7 and 460 r/min):
- _____
- _____
- _____
- _____
- _____
- _____