

<u>Help</u>

dougsweetser -

Course

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Problem 2.7

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Problem 2.7

2 points possible (ungraded)

Find all the isolated singularities of the functions and define their type (assuming n is an integer).

1)
$$f(z) = \frac{\sin z}{1 - \tan z}$$

-) simple poles at $z=rac{\pi}{4}+2\pi n$
-) simple poles at $z=rac{\pi}{4}+\pi n$
- \bigcap simple poles at $z=rac{\pi}{4}+2\pi n$ and higher order poles at $z=rac{3\pi}{4}+2\pi n$

2)
$$f(z)=rac{e^{c/(z-a)}}{e^{z/a}-1}$$

-) simple poles at $z=2\pi i n a$ and removable singularity at z=a
-) simple poles at $z=2\pi i na$ and essential non-isolated singularity at z=a
- \bigcap simple poles at $z=2\pi i n a$ and essential isolated singularity at z=a
-) simple poles at $z=\pi i n a$ and essential isolated singularity at z=a

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