28.

a) $\mu = 20$ customers / hour.

$t = 10 \text{ min} = \frac{10}{60} = \frac{1}{6}$ hour

probability that it will be take more than 10 min to serve a customers $\Big\} = e^{-\mu t}$

$= e^{-20 \times 1/6}$

$= e^{-10/3}$

$= 0.0357$

b) $t = 4 \text{ min} = \frac{4}{60} = \frac{1}{15}$ hours.

probability that a customer will be free within 4 min

$= 1 - e^{-\mu t}$

$= 1 - e^{-20 \times 1/15} = 1 - e^{-4/3}$

$= 1 - 0.264$

$= 0.736.$

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