~~5.1~~

5.2. ~~CSMA~~ CSMA

5.2.1.

In a 10 Mbps CSMA/CD, the minimum frame size is found to be 512b. What should it be if the data rate is

a) 100 Mbps

T_{prop} stays the same $\Rightarrow$ $T_{tx} \geq 2T_{prop}$ must also remain constant

$T_{tx} = \frac{S_f}{R} \Rightarrow \frac{S_f'}{R'} = \frac{S_f}{R} \Rightarrow S_f' = \frac{R'}{R} S_f \Rightarrow S_f(100\,Mbps) = \frac{100\,Mbps}{10\,Mbps} \cdot 512\,b = \boxed{5120\,b}$

b) 1 Gbps

$S_f(R = 1\,Gbps) = \frac{1\,Gbps}{10\,Mbps} \cdot 512\,b = \boxed{5120\,0\,b = 51.2\,kb}$

c) 10 Gbps

$S_f(R = 10\,Gbps) = \frac{10\,Gbps}{10\,Mbps} \cdot 512\,b = \boxed{512\,000\,b = 512\,kb}$