In an analogy to waves on strings to E&M waves, a light string corresponds to a (fast, slow) EM media and a heavy string corresponds to a (fast, slow) EM media.

A. fast; slow
B. slow; fast
C. slow; slow
D. fast; fast

For our reflected and transmitted waves, how many unknowns have we introduced?

$$\mathbf{E}_R = \widetilde{E_R}\, e^{i(k_R z - \omega_R t)} \hat{n}_R$$
$$\mathbf{E}_T = \widetilde{E_T}\, e^{i(k_T z - \omega_T t)} \hat{n}_T$$

A. 2

B. 4

C. 8

D. 12

E. None of the above

For our reflected and transmitted waves, how many unknowns have we introduced?

$$\mathbf{E}_R = \widetilde{E_R}\, e^{i(k_I z - \omega_I t)}\hat{n}_I$$
$$\mathbf{E}_T = \widetilde{E_T}\, e^{i(k_T z - \omega_I t)}\hat{n}_I$$

A. 2

B. 4

C. 8

D. 12

E. None of the above

An EM wave is normally incident on a boundary between two materials ($n_1 \ll n_2$). If the incident wave starts in **material 1**,

A. most of the wave is reflected back; very little of the wave transmits through material 2
B. some of the wave is reflected back; some of the wave transmits through material 2
C. very little of the wave is reflected back; most of the wave transmits through material 2
D. ???

An EM wave is normally incident on a boundary between two materials ($n_1 \ll n_2$). If the incident wave starts in **material 2**,

A. most of the wave is reflected back; very little of the wave transmits through material 1
B. some of the wave is reflected back; some of the wave transmits through material 1
C. very little of the wave is reflected back; most of the wave transmits through material 1
D. ???

An EM wave is normally incident on a boundary between two materials (n_1 is close to n_2). If the incident wave starts in **material 1**,

A. most of the wave is reflected back; very little of the wave transmits through material 1
B. some of the wave is reflected back; some of the wave transmits through material 1
C. very little of the wave is reflected back; most of the wave transmits through material 1
D. ???