Assigned 1-20

1.) A book shelf holds 5 different English   OR
books, 4 different French books, and
8 different German books.

(a) How many ways are there to choose 3 books,
one from each language?

$$|F| \times |E| \times |G| = 5 \times 4 \times 8 = \boxed{160}$$

(b) How many ways are there to choose 2 books,
each from a different language?

$$|F| \times |E| + |F| \times |G| + |E| \times |G|$$
$$= 4 \cdot 5 + 4 \cdot 8 + 5 \cdot 8$$
$$= 20 + 32 + 40$$
$$= \boxed{92}$$