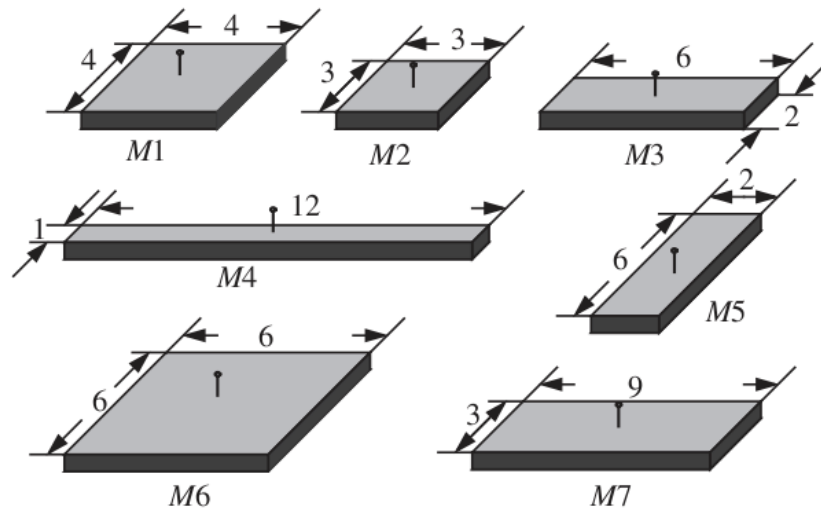


Exercice 1

Détermine la capacité des structures MOS suivantes en sachant que $C_{OX} = 4\text{fF}/\mu\text{m}^2$

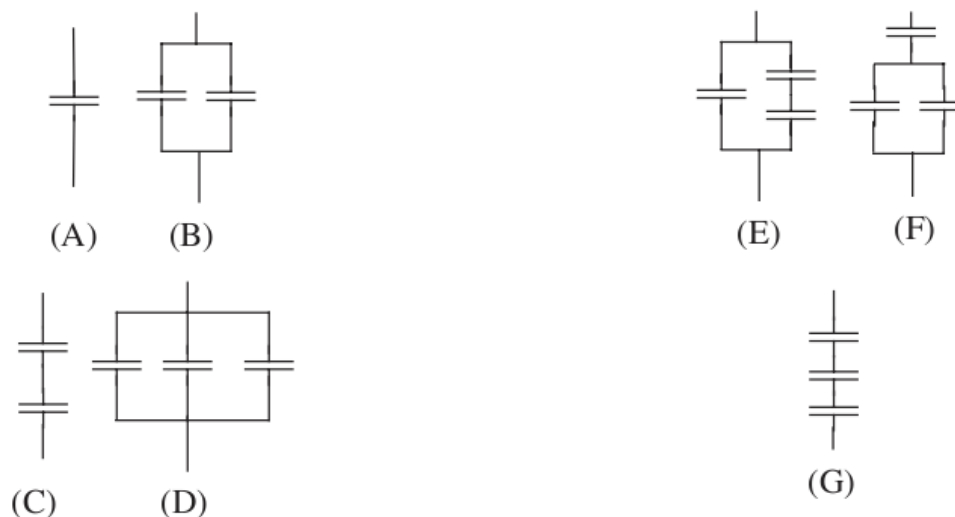


Les nombres notés sur la figure sont en μm

Exercice 2

EXAMPLE 9.3 CAPACITOR COMBINATIONS What equivalent capacitors can be made by combining up to three $1\text{-}\mu\text{F}$ capacitors in series and/or in parallel?

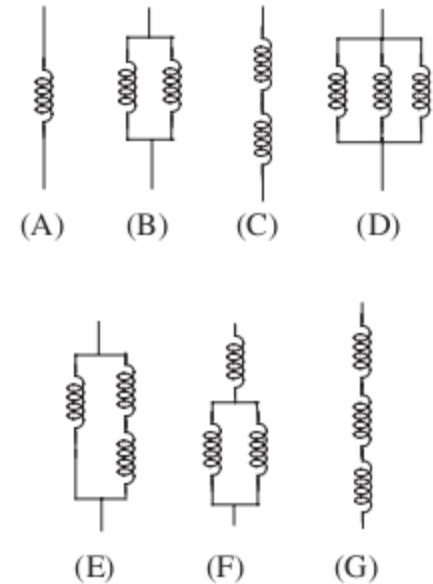
Figure 9.17 shows the possible capacitor combinations that use up to three capacitors. To determine their equivalent capacitances, use the series combination result from Equation 9.39 and/or the parallel combination result from Equation 9.42. This yields the equivalent capacitances of: (A) $1\text{ }\mu\text{F}$, (B) $2\text{ }\mu\text{F}$, (C) $0.5\text{ }\mu\text{F}$, (D) $3\text{ }\mu\text{F}$, (E) $1.5\text{ }\mu\text{F}$, (F) $0.667\text{ }\mu\text{F}$, and (G) $0.333\text{ }\mu\text{F}$.



Exercice 3

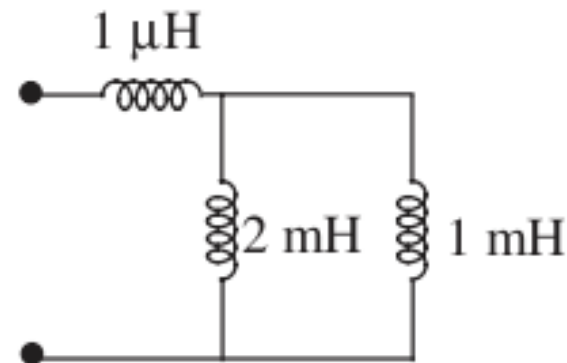
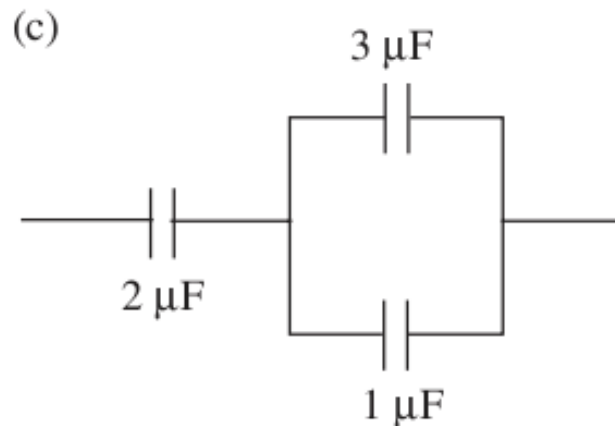
EXAMPLE 9.4 INDUCTOR COMBINATIONS What equivalent inductors can be made by combining up to three $1\text{-}\mu\text{H}$ inductors in series and/or in parallel?

Figure 9.20 shows the possible inductor combinations that use up to three inductors. To determine their equivalent inductances, use the series combination result from Equation 9.45 and/or the parallel combination result from Equation 9.48. This yields the equivalent inductances of: (A) $1\text{ }\mu\text{H}$, (B) $0.5\text{ }\mu\text{H}$, (C) $2\text{ }\mu\text{H}$, (D) $0.333\text{ }\mu\text{H}$, (E) $0.667\text{ }\mu\text{H}$, (F) $1.5\text{ }\mu\text{H}$, and (G) $3\text{ }\mu\text{H}$.



Exercice 4

Déterminez la capacité et l'inductance équivalente pour les circuits suivants



Réponses

Ex. 1: $C_4=C_5=C_3=C_5=48\text{fF}$; $C_7= 108\text{fF}$; $C_1= 64 \text{ fF}$;
 $C_2= 36 \text{ fF}$; $C_6= 144\text{fF}$

Ex. 2:

Ex. 3:

Ex. 4: $1.33 \mu\text{F}$ (Ex 9.55 page 494)
 $668 \mu\text{H}$ (Ex 9.56 page 495)