

Answers to Even # Homework Problems (8th Edition)
(Numbers for 7th Edition in parentheses)

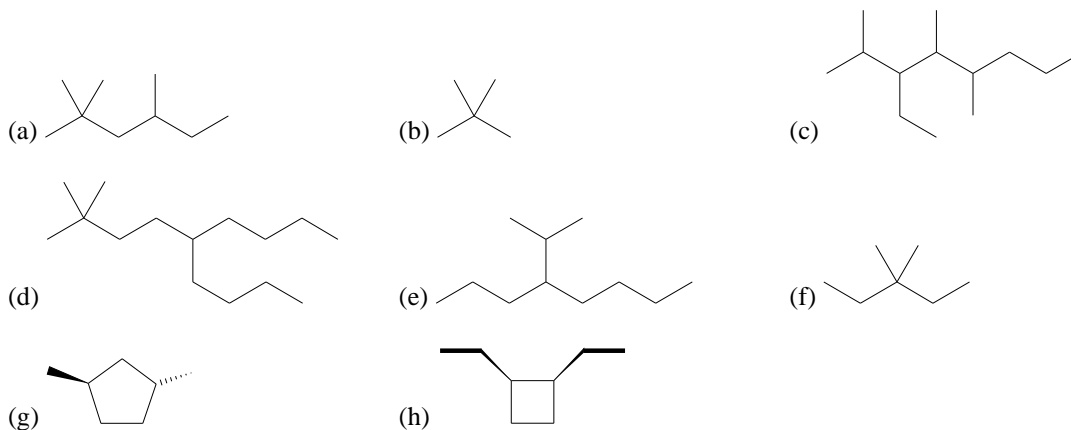
10.26 (26) This problem asks for a structural formula. In this key, I have drawn the condensed formula.

- (a) $\text{CH}_3\text{CH}=\text{CHCH}(\text{CH}_3)\text{CH}_3 = \text{C}_6\text{H}_{12}$
- (b) $\text{CH}_3\text{CH}_2\text{CH}_2\text{C}(\text{O})\text{OH} = \text{C}_4\text{H}_8\text{O}_2$
- (c) $\text{CH}_3\text{CH}_2\text{C}(\text{O})\text{CH}_3 = \text{C}_4\text{H}_8\text{O}$
- (d) $\text{CH}_3\text{CH}(\text{CH}_3)\text{CH}(\text{O}) = \text{C}_4\text{H}_8\text{O}$
- (e) $\text{CH}_3\text{C}(\text{CH}_3)_2\text{CH}_2\text{CH}_2\text{NH}_2 = \text{C}_6\text{H}_{15}\text{N}$
- (f) $\text{CH}_3\text{CH}(\text{NH}_2)\text{C}(\text{O})\text{OH} = \text{C}_3\text{H}_7\text{NO}_2$
- (g) $\text{CH}_3\text{CH}(\text{OH})\text{CH}_2\text{CH}_2\text{CH}_3 = \text{C}_5\text{H}_{12}\text{O}$
- (h) $\text{CH}_3\text{CH}(\text{OH})\text{CH}_2\text{C}(\text{O})\text{OH} = \text{C}_4\text{H}_8\text{O}_3$
- (i) $\text{CH}_2=\text{CHCH}_2\text{OH} = \text{C}_3\text{H}_6\text{O}$

11.14 (14) Write formulas

- (a) $\text{C}_{10}\text{H}_{22}$
- (b) C_8H_{18}
- (c) $\text{C}_{11}\text{H}_{24}$

11.24 (24) Show stick formula



11.40 (43) Balance equations

- (a) $2 \text{C}_6\text{H}_{14} + 19 \text{O}_2 \longrightarrow 12 \text{CO}_2 + 14 \text{H}_2\text{O}$
- (b) $\text{C}_6\text{H}_{12} + 9 \text{O}_2 \longrightarrow 6 \text{CO}_2 + 6 \text{H}_2\text{O}$
- (c) $2 \text{C}_6\text{H}_{14} + 19 \text{O}_2 \longrightarrow 12 \text{CO}_2 + 14 \text{H}_2\text{O}$

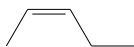
11.52 (55) Write correct IUPAC names

- (a) 2-methylpentane
- (b) 2-methylpentane
- (c) 3-ethyl-3-methylpentane
- (d) 3,4-dimethylhexane
- (e) 4-methylheptane
- (f) 3-ethyl-3-methyloctane
- (g) 1,1-dimethylcyclopropane
- (h) 1-ethyl-3-methylcyclohexane

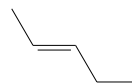
12.24 (23)



1-pentene



cis-2-pentene



(c) *trans*-2-pentene



2-methyl-1-butene

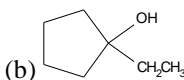
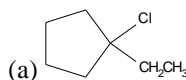


2-methyl-2-butene

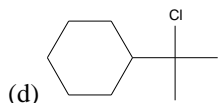


3-methyl-1-butene

12.34 (36)



(c) $\text{CH}_3(\text{CH}_2)_5\text{CH}(\text{I})\text{CH}_3$

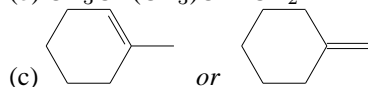


(e) $\text{CH}_3\text{CH}_2\text{CH}(\text{OH})\text{CH}_2\text{CH}_3$ and (f) $\text{CH}_3\text{CH}(\text{OH})\text{CH}_2\text{CH}_2\text{CH}_3$

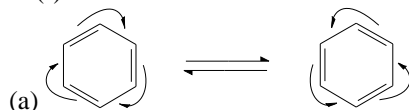
12.38 (40)

(a) $\text{CH}_2=\text{C}(\text{CH}_3)\text{CH}_2\text{CH}_3$ or $\text{CH}_3\text{C}(\text{CH}_3)=\text{CHCH}_3$

(b) $\text{CH}_3\text{CH}(\text{CH}_3)\text{CH}=\text{CH}_2$



13.48 (-) Resonance



(b) In all three structures, the nitrogen lone pairs are not part of the aromatic ring system.

(c) The bond angles around all C and N atoms is expected to be 120°

16.6 (6) For alcohols, the classification is based on the carbon atom that the OH is attached to. For amines, the classification is based on the number of carbon atoms attached to the nitrogen.

16.22 (22) Stronger base

(a) $\text{C}_5\text{H}_{11}\text{N}$ (first one)

(b) $\text{C}_6\text{H}_{11}\text{N}(\text{CH}_3)_2$

(c) $\text{C}_6\text{H}_{11}\text{CH}_2\text{NH}_2$

16.42 (43) Comparing compounds

(a) CH_3SH is the strongest acid

(b) $(\text{CH}_3)_2\text{NH}$ is the strongest base

(c) CH_3OH has the highest boiling point (due to H-bonding)

(d) CH_3OH (OH H-bonds stronger than NH bonds)

17.12 (14) Carbonyl groups in (b), (c), (d), and (f)