

Homework:

2.19 Pairs of constitutional isomers b, c, e + f

2.21 a) ethyl b) isopropyl c) isobutyl d) tert-butyl (t-butyl)

2.23 a) 2-methylpentane

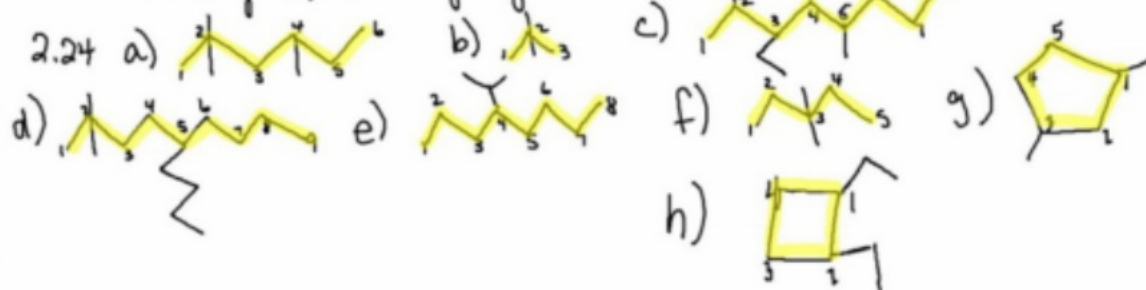
b) 2,5-dimethylhexane

c) 3-ethyloctane

d) 1-isopropyl-2-methylcyclohexane

e) isobutylcyclopentane

f) 1-ethyl-2,4-dimethylcyclohexane



2.25 A conformation is any 3-D arrangement of the atoms in a molecule that result from the rotation around a single bond.

2.26 The carbon-carbon bonds actually zig-zag because of the 109.5° bond angles.

2.28 when a hydrocarbon is in a ring formation the bonds are locked into position allowing for cis-trans formation (geometric isomer)

| ΔT Propanol | ΔT Isopropanol | ΔT Acetone | ΔT Acetic Acid |
|---------------------|------------------------|--------------------|------------------------|
| 3.3°C | 3.8°C | 17.0°C | 2.9°C |
| 6.4°C | 7.5°C | 17.4°C | 3.3°C |
| 4.5°C | 6.5°C | 13.4°C | 3.6°C |
| 6.1°C | 3.9°C | 12.7°C | 2.9°C |
| 4.3°C | 5.5°C | 14.3°C | 3.6°C |
| 3.5°C | 5.5°C | 11.8°C | 3.8°C |
| 4.7°C | 5.5°C | 14.4°C | 3.4°C |
| | | | |
| | | | |
| | | | |

| ΔT Propanol | ΔT Isopropanol | ΔT Acetone | ΔT Acetic Acid |
|---------------------|------------------------|--------------------|------------------------|
| 0.7°C | 1.6°C | 6.7°C | 0.7°C |
| 3.3°C | 6.2°C | 9.6°C | 3.8°C |
| 3.7°C | 5.4°C | 12.5°C | 4.0°C |
| 4.2°C | 5.8°C | 12.3°C | 3.1°C |
| 4.0°C | 6.0°C | 17.2°C | 5.2°C |
| 5.3°C | 7.2°C | 13.2°C | 4.1°C |
| 5.1°C | 7.5°C | 9.7°C | 4.3°C |
| 5.8°C | 7.5°C | 17.5°C | 3.9°C |
| 3.2°C | 3.8°C | 11.4°C | 4.7°C |
| 4.5°C | 6.4°C | 14.5°C | 4.1°C |

Ave. 4.0°C prop
 5.7°C iso
 12.5°C acetone
 3.8°C acetic acid

