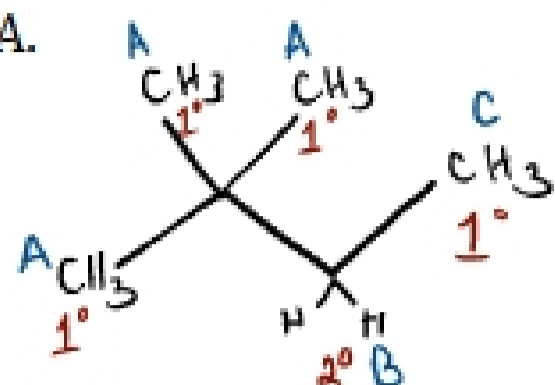


Radical Practice- Answers

1/2A.

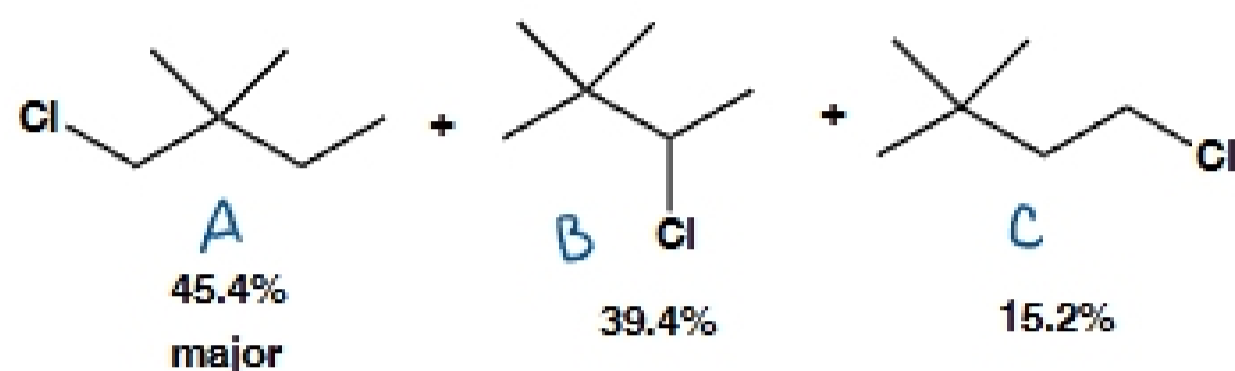


A: All 3 methyls are equivalent as they would each produce 1-chloro-2,2-dimethylbutane

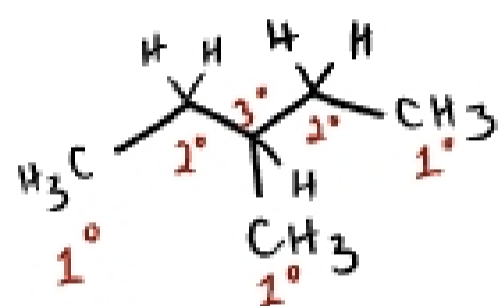
$$A: \frac{9H \times 1}{(9+7.8+3)} \times 100 = 45.4\%$$

$$B: \frac{2H \times 3.9}{19.8} \times 100 = 39.4\%$$

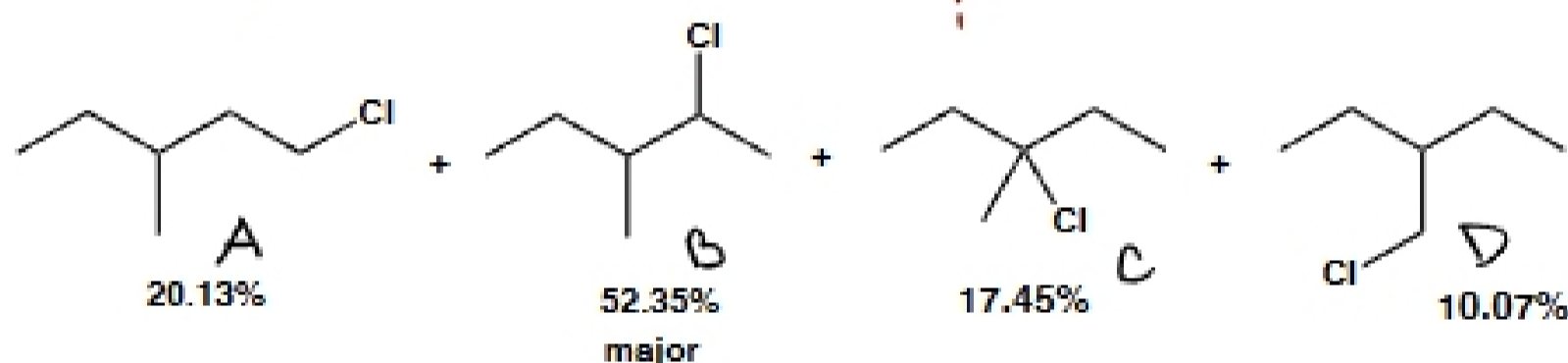
$$C: \frac{3H \times 1}{19.8} \times 100 = 15.2\%$$



B.



There is a plane of symmetry through C3/C3-methyl. This cause C1 & C5 to be equivalent and C2 & C4 to be equivalent



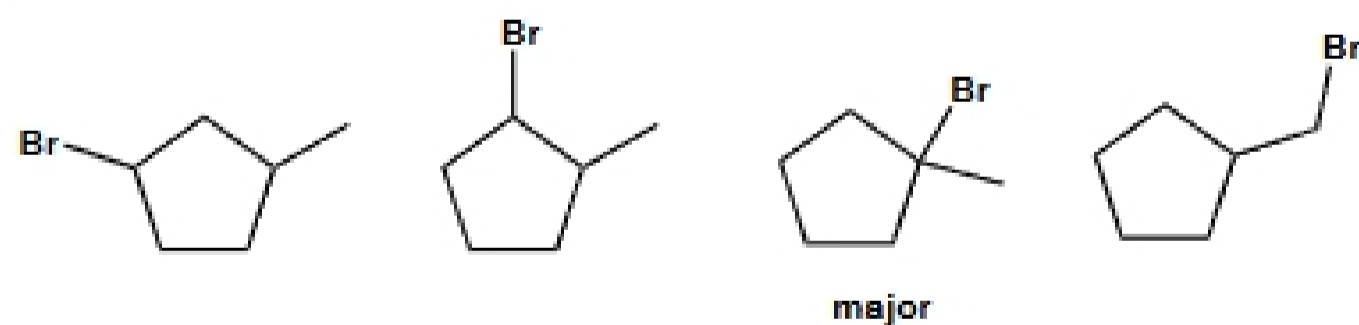
$$A: \frac{6H \times 1}{(6+15.6+5.2+3)} \times 100 = 20.13\%$$

$$C: \frac{1H \times 5.2}{29.8} \times 100 = 17.45\%$$

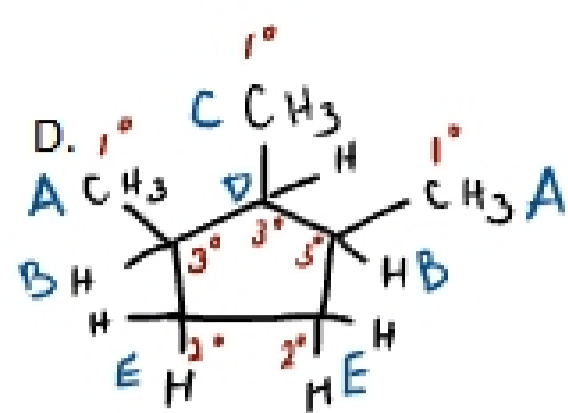
$$B: \frac{4H \times 3.9}{29.8} \times 100 = 52.35\%$$

$$D: \frac{3H \times 1}{29.8} \times 100 = 10.07\%$$

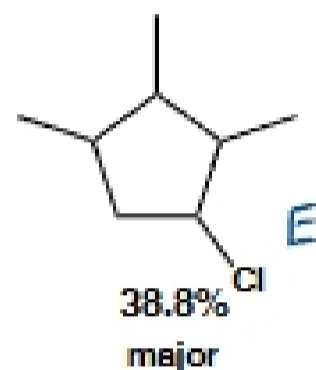
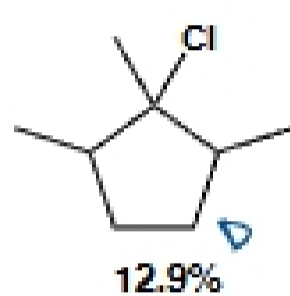
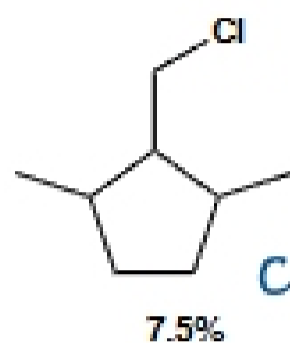
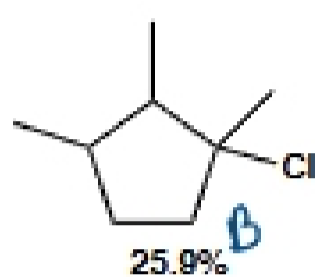
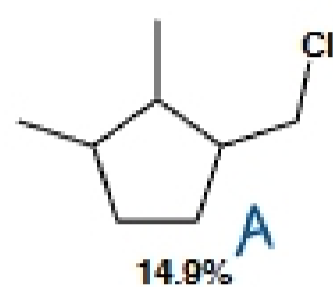
C.



Radical Practice- Answers



There is a plane of symmetry through C3 & the C3-methyl.  
 This makes C3 & the C3-methyl unique.  
 All groups reflecting the plane are equivalent C1/C3, the methyls off C1 & C3 and the CH<sub>2</sub>'s



$$A: 6H \times 1 = \frac{6}{(6+10.4+3+5.2+15.6)} \times 100 = 14.9\%$$

↖ 40.2

$$B: 2H \times 5.2 = \frac{10.4}{40.2} \times 100 = 25.9\%$$

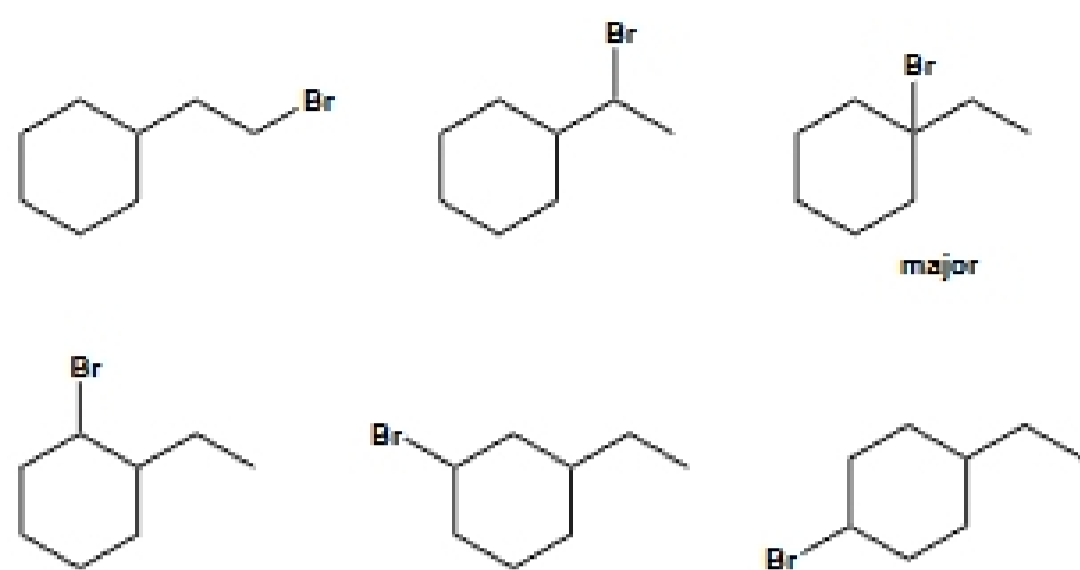
$$C: 3H \times 1 = \frac{3}{40.2} \times 100 = 7.5\%$$

$$D: 1H \times 5.2 = \frac{5.2}{40.2} \times 100 = 12.9\%$$

$$E: 4H \times 3.9 = \frac{15.6}{40.2} \times 100 = 38.8\%$$

Radical Practice- Answers

E.

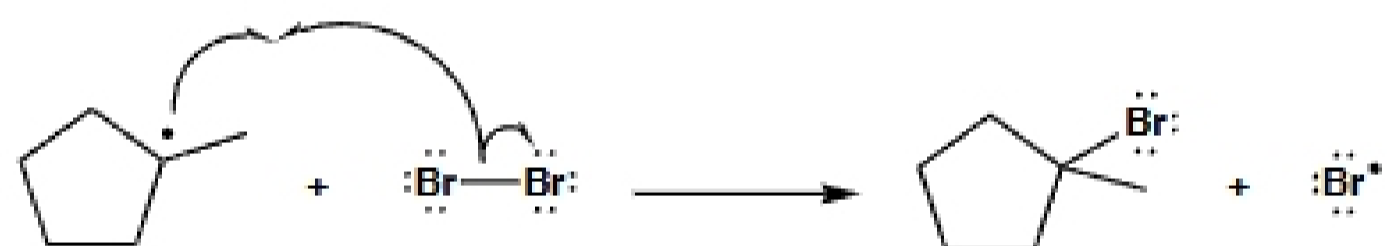


3) Any two radicals are fine to join for the termination step.

Initiation



Propagation



Termination



4 Remember resonance of the allylic position (1<sup>st</sup> structures) is going to allow for greater stability. Both the radical and cation are electron deficient so they have the same stability trend.

F.



G.

