Honor Code \_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date – Summer of 2022

Inverse Square Law and Shielding

1. A source of radiation emits 44.2 mr/hr at 1.5 meters. At what distance must you stand if you want to reduce your exposure to 2.0 mr/hr?
2. From the above question, how long would you have to stand at 1.5 meters to receive 250 mr of radiation?
3. From question 1, if a shield had a 2.1 cm thickness and the HVL was 6.2 mm, what is your exposure at 1.5 meters?
4. If a radiation source had a reading of 0.5 mR/hr at 4.67 meters, what is its reading if you moved closer to 1.0 meters?
5. The mac daddy question – A radiation source emits 500 r per hour at 0.1 mm. A 1.65 cm shield is placed around it with an HVL of 1.1 mm. How far away must you stand to receive background radiation? (0.05 mr/hr)

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