(9) 16.0g Pd → 1.0g halflife = 17days

16.0g × ½ = 8.0g × ½ = 4.0g × ½ = 2.0g × ½ = 1.0g ✓
(1) (2) (3) (4)

4 halflives
4 × 17 = **68 days**

(10) time = 5.50seconds

1.2g × ½ = .6g × ½ = .3g × ½ = **.15g**
(1) (2) (3)

(3)

5.5seconds / 3 = **1.833seconds**

(11) Fusion is the result of two nuclei coming together to form a new larger atom. ~~The~~ This requires a very large amount of energy to occur.

$^{40}_{19}K + ^{22}_{11}Na \rightarrow ^{62}_{30}Zn$ * Also releases a lot of energy.

Fission is the splitting of an unstable nucleus. This releases a larger amount of energy.

$^{238}_{92}U \rightarrow ^{120}_{50}Sn + ^{118}_{42}Mo$