Concept questions

Discussion Week 2

Complete the following reaction equation:

$$^{235}_{92}U + n = ^{90}_{38}Sr + \blacksquare$$

a)
$$\frac{146}{55}$$
Cs + p

c)
$$^{146}_{54}$$
Xe

b)
$$^{145}_{54}$$
Xe

d)
$$_{55}^{146}$$
Cs

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$${}^{146}_{55}$$
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$$_{54}^{145}$$
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d)
$$\frac{146}{55}$$
Cs

What is the atom fraction of hydrogen in water (H_2O)? What is the atom fraction of hydrogen in heavy water (D_2O)?

```
a) 0.50; 0.66
```

- b) 0.50; 0.50
- c) 0.66; 0.66
- d) 0.66; 0.80

What is the atom fraction of hydrogen in water (H_2O)? What is the atom fraction of hydrogen in heavy water (D_2O)?

```
a) 0.50; 0.66
b) 0.50; 0.50
c) 0.66; 0.66
d) 0.66; 0.80
H_2O = 2^{1}H \text{ atoms } (2/3) \\ = 1 O \text{ atom } (1/3) \\ = D_2O = 2^{2}H \text{ atoms } (2/3) \\ = 1 O \text{ atom } (1/3)
```

Approximately, what is the mass fraction of hydrogen in water (H2O)? What is the mass fraction of hydrogen in heavy water (D2O)?

```
a) 0.11; 0.44
```

- b) 0.11; 0.20
- c) 0.25; 0.50
- d) 0.22; 0.88

Approximately, what is the mass fraction of hydrogen in water (H2O)? What is the mass fraction of hydrogen in heavy water (D20)?

```
a) 0.11; 0.44
```

0.11; 0.20

0.25; 0.50

d) 0.22; 0.88

H₂O 2 ¹H atoms, m ~1 (2/18) 1 O atom, m ~16 (16/18)

D₂O2 ²H atoms, m ~2 (4/20)
1 O atom, m ~16 (16/20)