# Starters for 10: Sgiliau pontio – atebion

## Cynnwys

### Cymwyseddau mathemateg sylfaenol

* 1. Aildrefnu hafaliadau
  2. BODMAS (trefn gweithrediadau)
  3. Cyfrifo symiau (pennu unedau)
  4. Mynegi rhifau mawr a bach
  5. Ffigurau ystyrlon, lleoedd degol a thalgrynnu
  6. Trosi unedau 1 – Hyd, màs ac amser
  7. Trosi unedau 2 – Cyfaint
  8. Molau a màs
  9. Molau a chrynodiad

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## 0.2.1. Aildrefnu hafaliadau

**1.**

a. *(1 marc)*

b. *(1 marc)*

**2.**

a. *(1 marc)*

b. =

1 marc os yw dwy ran y ffracsiwn yn gywir, 1 marc am ganslo × 10–6 i lawr i × 10–3. *(2 farc)*

**3.**

a. *(1 marc)*

b.

1 marc am ddefnyddio p = mv yn yr hafaliad cyntaf ac 1 marc am aildrefnu’n llwyddiannus.

*(2 farc)*

**4.**

neu

1 marc am aildrefnu drwy symud 0.5 m o dan KE, 1 marc am ddelio â’r v2 drwy ychwanegu’r ail isradd. *(2 farc)*

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## 0.2.2. BODMAS

**1.** a. 28 *(1 marc)*

b. 40 *(1 marc)*

c. 8 *(1 marc)*

d. 45 *(1 marc)*

e. 6 *(1 marc)*

f. 40 *(1 marc)*

**2.** a. 180 *(1 marc)*

b.5352 *(1 marc)*

c.180 *(1 marc)*

Hafaliad: Mae pwyso = ar ôl pob gweithrediad yn arwain at wallau o ran BODMAS. *(1 marc)*

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## 0.2.3. Cyfrifo symiau

**1.** g cm–3 *(1 marc)*

**2.** mol dm–3 *(1 marc)*

**3.** g cm–3 *(1 marc)*

**4.** mol dm–3 s–1 *(1 marc)*

**5.** N m–2 *(1 marc)*

**6.** a. mol2 dm–6 *(1 marc)*

b.mol–1 dm3 s–1 *(1 marc)*

c.kPa–0.5 *(1 marc)*

d.mol2 dm–6 *(1 marc)*

e.mol dm–3 *(1 marc)*

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## 0.2.4. Mynegi rhifau mawr a bach

**1.** a. 1.06 × 106 *(1 marc)*

b.1.06 × 10–3*(1 marc)*

c. 2.222 × 102 *(1 marc)*

**2.** 1 marc am ddewis pŵer × 10x yn ddoeth; × 10–2 neu × 10–3 yw’r doethaf yn yr achos hwn. 0.5 marc am bob rhif sydd wedi'i drosi yn gywir.

**3.** a. 104 *(1 marc)*

b.1014*(1 marc)*

c. 0.5 × 10–11 or 5 × 10–12 *(1 marc)*

d. 2.4 × 102 *(1 marc)*

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## 0.2.5. Ffigurau ystyrlon, lleoedd degol a thalgrynnu

|  |  |  |  |
| --- | --- | --- | --- |
|  | | **Ffigurau ystyrlon** | **Lle degol** |
| **1** | 3.131 88 | 6 | 5 |
| **2** | 1000 | 1 | 0 |
| **3** | 0.000 65 | 2 | 5 |
| **4** | 1006 | 4 | 0 |
| **5** | 560.0 | 4 | 1 |
| **6** | 0.000 480 | 3 | 6 |

*(0.5 marc am bob ateb cywir)*

**7.** a. i. 0.0758 *(1 marc)*

ii. 0.08*(1 marc)*

b. i. 231 *(1 marc)*

ii. 231.46*(1 marc)*

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## 0.2.6. Trosi unedau 1 – Hyd, màs ac amser

**1.** 12 mm *(1 marc)*

**2.** 72.00 m *(1 marc)*

**3.** 270 s *(1 marc)*

**4.** 154 s *(1 marc)*

**5.** 2 awr 25 mun *(1 marc)*

**6.** 15.5 t *(1 marc)*

**7.** 26.5 g *(1 marc)*

**8.** 75 mg/tabled = 0.075 g/tabled

1 g ÷ 0.075 g/tabled = 13.3 tabled

Isafswm y tabledi y mae eu hangen = 14 (1 marc)

**9.** 30 g/mun *(1 marc)*

NODWCH Yn yr enghraifft hon, gan eich bod yn trosi 1/yr uned, mae angen i chi wneud i'r gwrthwyneb i’r hyn a ddisgrifir yn y diagram e.e. × 60 yn hytrach na ÷ 60.

**10.** 10.44 kg/h = 10 440 g/h = 174 g/min = 2.9 g/s *(1 marc)*

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## 0.2.7. Trosi unedau 2 – Cyfaint

**1.** potel ddiod, 1 dm3; ciwb o siwgr, 1 cm3; peiriant golchi, 1 m3 *(1 marc)*

**2.** I drosi cyfaint mewn **cm3** i gyfaint mewn **dm3**, dylid rhannu â 1000. *(½ marc)* I drosi cyfaint mewn **cm3** i gyfaint mewn **m3**, dylid rhannu â 1 000 000. *(½ marc)*

**3.** a. 1.6 dm3 *(1 marc)*

b.5.5 × 10–4 m3 *(1 marc)*

c.1350 cm3 *(1 marc)*

d.375 000 000 cm3 *(1 marc)*

e.0.006 54 m3 *(1 marc)*

**4.**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **£ fesul m3** |  | **c fesul cm3** |  | **c fesul cm3** |
| **Silindr ‘a’** | 7.27 | neu | 7.27 × 10–4 | neu | 0.727 |
| **Silindr ‘b’** | 7.87 |  | 7.87 × 10–4 |  | 0.787 |
| **Silindr ‘c’** | 4.11 |  | 4.11 × 10–4 |  | 0.411 |

*(1 marc)*

*(1 marc)*

*(1 marc)*

Felly ‘c’ yw'r gwerth gorau am arian.

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## 0.2.8. Molau a màs

**1.** a. 32.0 g ÷ 16.0 g mol–1 = 2 mol *(1 marc)*

b. 175 g ÷ 100.1 g mol–1 = 1.75 mol *(1 marc)*

c. 0.2 g ÷ 180.0 g mol–1 = 0.0011 mol *(1 marc)*

**2.** a 20 mol × 180 g mol–1 = 3 600 g *(1 marc)*

b 5.00 × 10–3 mol × 63.5 g mol–1 = 0.318 g *(1 marc)*

c 42.0 mol × 249.6 g mol–1 = 10 500 g *(1 marc)*

**3.** a. i. 3.09 g ÷ 0.0250 mol = 123.6 g mol–1 *(1 marc)*

ii. CuCO3*(1 marc)*

b. màs molar cromiwm carbonad = 4.26 g ÷ 0.015 mol = 284 g mol–1 *(1 marc)*

Cr2(CO3) *(1 marc)*

**CWESTIWN BONWS**

6.02 × 1023 c ÷ 7 500 000 000 o bobl = 8.03 × 1013 c y pen neu 803 000 miliwn o bunnau y pen!

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## 0.2.9. Molau a chrynodiad

**1.** a. 1.5 mol ÷ 0.25 dm3 = 6.0 mol dm–3 *(1 marc)*

b. 0.25 dm3 × 0.0150 mol dm–3 = 3.75 × 10–3 mol *(1 marc)*

c. 0.125 mol ÷ 0.85 mol dm–3 = 0.15 dm3 *(1 marc)*

**2.** a. 5.0 g ÷ 84.0 g mol–1 = 0.0595 mol *(1 marc)*

0.0595 mol ÷ 0.100 dm3 = 0.60 mol dm–3 *(1 marc)*

b. 0.025 dm3 × 3.8 mol dm–3 = 0.095 mol *(1 marc)*

0.095 mol × 40.0 g mol–1 = 3.8 g *(1 marc)*

c. 2.5 g ÷ 129.9 g mol–1 = 0.0192 mol *(1 marc)*

0.0192 mol ÷ 1.3 mol dm–3 = 0.015 dm3 *(1 marc)*

0.0148 dm3 = 15 cm3 (i 2 ffig. yst.) *(1 marc)*