**Activity 3 Worksheet (scaffolded): Calculating unit rates**

Calculate the three different unit rates included in the extracts from the Bill of Quantities (BoQ) shown below.
In industry, the calculation of unit rates is known as building-up unit rates.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Item | Description | Quantity | Unit | Unit Rate | Total |
| a | Foundation excavation not exceeding 2 m deep. |  | m3 |  |  |
| b | A142 mesh reinforcement 2.22 kg/m2, minimum 300 mm side and end laps. |  | m2 |  |  |
| c | One brick wall in type B facings, in 1:1:6 mortar, pointed both sides as the work proceeds. |  | m2 |  |  |

**Item a**

Using the information provided on the Activity 3 Reference sheet calculate the unit rate for:

Foundation excavation not exceeding 2 m deep.

Plant

Excavator \_\_\_\_\_\_\_\_\_ hours × £\_\_\_\_\_\_\_\_ per hour = £\_\_\_\_\_\_\_\_\_\_ (A)

Labour

Excavator Driver \_\_\_\_\_\_\_\_\_ hours × £\_\_\_\_\_\_\_\_ per hour = £\_\_\_\_\_\_\_\_\_\_ (B)

Banksman \_\_\_\_\_\_\_\_\_ hours × £\_\_\_\_\_\_\_\_ per hour = £\_\_\_\_\_\_\_\_\_\_ (C)

Total unit rate (A + B + C) = £\_\_\_\_\_\_\_\_\_\_ per m3

**Item b**

Using the information provided on the Activity 3 Reference sheet calculate the unit rate for:

A142 mesh reinforcement 2.22 kg/m2, minimum 300 mm side and end laps.
(There is no plant required for this item)

Materials

A142 mesh 35.00 per sheet ÷ (4.8 × 2.4) = £35.00 ÷ 11.52 = £\_\_\_\_\_\_\_\_\_\_ (A)

 + 22.5% waste £\_\_\_\_\_\_\_\_\_\_ (B)

Spacer blocks/chairs \_\_\_\_\_\_\_\_ no × £\_\_\_\_\_\_\_\_ = £\_\_\_\_\_\_\_\_\_\_ (C)

 + \_\_\_\_% waste £\_\_\_\_\_\_\_\_\_\_ (D)

Tie wire \_\_\_\_\_\_\_\_ length × £\_\_\_\_\_\_\_\_ = £\_\_\_\_\_\_\_\_\_\_ (E)

 + \_\_\_\_% waste £\_\_\_\_\_\_\_\_\_\_ (F)

Sub-total materials (A + B + C + D + E + F) £\_\_\_\_\_\_\_\_\_\_ (G)

Labour

Steel Fixer \_\_\_\_\_\_\_\_ hours × £\_\_\_\_\_\_\_\_ = £\_\_\_\_\_\_\_\_\_\_ (H)

Total (unit rate) (G + H) = £\_\_\_\_\_\_\_\_\_\_ per m2

**Item c**

Using the information provided on the Activity 3 Reference sheet calculate the unit rate for:

One brick wall in type B facings, in 1:1:6 mortar, pointed both sides as the work proceeds.

Materials

Bricks (£722.00 ÷ 1000 = £0.72 each) \_\_\_\_\_\_\_\_\_ No × £\_\_\_\_\_\_\_\_\_= £\_\_\_\_\_\_\_\_\_\_\_ (A)

Mortar \_\_\_\_\_\_\_\_\_ m3 × £\_\_\_\_\_\_\_\_\_= £\_\_\_\_\_\_\_\_\_\_\_ (B)

Sub-total materials (A + B) £\_\_\_\_\_\_\_\_\_\_\_ (C)

 + \_\_\_\_% waste £\_\_\_\_\_\_\_\_\_\_\_ (D)

Labour

Bricklayer \_\_\_\_\_\_\_\_ hours × £\_\_\_\_\_\_\_\_ = £\_\_\_\_\_\_\_\_\_\_\_ (E)

Labourer \_\_\_\_\_\_\_\_ hours × £\_\_\_\_\_\_\_\_ = £\_\_\_\_\_\_\_\_\_\_\_ (F)

Total (unit rate) (C + D + E + F) = £\_\_\_\_\_\_\_\_\_\_ per m2