

Year 11 Inequality Problems : Answers

1) Peter $\pounds n$ per month

a) Jackie $\pounds n + 200$

b) Paula $\pounds 2n$ *more than*

c) Paula $>$ Jackie
 $2n > n + 200$

d) $2n - n > 200$
 $n > 200$

so Peter $> \pounds 200$ per month.

Least Peter earns = $\pounds 201$

2) Dafydd spends $\pounds n$

a) Sioned spends $\pounds 8n$

b) Faisal spends $\pounds 5n + 60$

c) Sioned $<$ Faisal
less than

$$8n < 5n + 60$$

d) $8n - 5n < 60$

$$3n < 60$$

$$n < \frac{60}{3}$$

$$n < 20$$

so Dafydd spends $< \pounds 20$ *less than*

most amount Dafydd spends to nearest penny
= $\pounds 19.99$

③ Pen costs n p

a) Pencil $n - 20$ p

b) Book $2n - 80$ p

c) Book $>$ pencil
↑ more than

$$2n - 80 > n - 20$$

d) $2n - n > -20 + 80$

$$n > 60 \text{ p}$$

↑ more than

so pen costs > 60 p

Least amount pen costs is 61p

④ Book weighs w kg

a) Table $w + 20$ kg

b) Chair $3w + 8$ kg

c) Chair $<$ Table
↑ less than

$$3w + 8 < w + 20$$

d) $3w - w < 20 - 8$

$$2w < 12$$

$$w < \frac{12}{2}$$

$$w < 6 \text{ kg}$$

Book weighs < 6 kg

Greatest weight in kg Book could be = 5 kg