Number Trial #1:

"Crickets"

You are asked to set up an operation breeding insects for the local zoo.

You are asked in this assessment need to work out how many crickets to breed. (Ignore the other insects.)

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Bearded Dragons:

Bearded dragons eat 48 crickets a week for every 500 g they weigh.

The zoo is just about to get two dragons that weigh 450g and 420g.

Chameleons:

The reptile keeper tells you that his chameleons eat 60 insects a day

He want three-fifths of those to be crickets.

Spiders:

The spider keeper orders 150 insects a month.

He would like them in the approximate ratio of crickets : roaches : wax worms of 2 : 2 : 1.

Turtles:

The turtle keeper is used to feeding them a can of frozen crickets a week. The cans are from America and weigh 1.2 ounces. He wants the same amount from you.

1 Ounce = 28.3495 Grams.

A cricket weighs about $\frac{1}{6}$ of a gram.

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Supply:

To be certain that you can always supply the right amount of crickets you decide to produce 20% more than required for the order.

You are asked to be able to supply the crickets weekly.

How many crickets do you need to breed each week?

Answers: Number Trial #1:

"Crickets"

Bearded Dragons:

$\frac{450}{500} \times 48 = 43.2$ and $\frac{420}{500} \times 48 = 40.32$ $\boxed{A}$

Rounding = 84 a week.

Chameleons:

$\frac{3}{5} \times 60 = 36$ a day $\boxed{A}$

$36 \times 7 = 252$ a week.

Spiders:

A ratio of 2 : 2 : 1 means crickets are two parts out of every 2 + 2 + 1 = 5

150 ÷ 5 = 30 each part. Two parts = 30 × 2 = 60 per month. $\boxed{A}$

60 /month = 60 × 12 = 720 per year. 720 ÷ 52 = 13.84 per week

Rounded = 14 a week.

Turtles:

1 Ounce = 28.3495 Grams so 1.2 ounces = 1.2 × 28.3495 = 34.0194 g $\boxed{A}$

A cricket weighs about $\frac{1}{6}$ of a gram, so 34.0194 × 6 = 204.11 crickets

Rounded (since only approx $\frac{1}{6}$) = 205 per week

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Supply:

84 + 252 + 14 + 205 = 555 per week.

20% of 555 = $\frac{20}{100} \times 48 = 111$ extra. $\boxed{A}$

555 + 111 = 666 crickets need to be bred every week.

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Any three $\boxed{A}$ gives Achieved.

Correct answer, allowing for one mistake, gives Merit.

Excellence is with correct with proper rounding, conversion of months to weeks, discussion of possible errors etc.