Functional HCF and LCM Questions

Highest Common Factor

1. Liz has two pieces of string, one 18 cm long and the other 24 cm long. She wants to cut them up to produce smaller pieces of string that are all of the same length, with no string left over. What is the greatest length, in cm, that she can make them?

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Answer ..... cm

(Total 2 marks)

2. A carpenter has two lengths of wood; one is 108cm long and the other is 72cm long. He wants to cut them up to produce smaller pieces of wood to build a shelving unit so they all need to be the same length, with no wood left over. What is the greatest length, in cm, that he can make the shelves?

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Answer ..... cm

(Total 2 marks)

3. A plumber has three lengths of copper pipe; one is 220cm, another is 348cm and the other is 104cm long. He wants to cut them up to produce smaller pipes to use in boilers so they all need to be the same length, with no copper left over. What is the greatest length, in cm, that he can make the pipes?

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Answer ..... cm

(Total 2 marks)

4. A seamstress has three colours of ribbon; the red is 126cm, the blue is 196cm and the green is 378cm long. She wants to cut them up so they are all the same length, with no ribbon wasted. What is the greatest length, in cm, that she can make the ribbons?

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Answer ..... cm

(Total 2 marks)

Lowest Common Multiple

1. Helen is organising a party and she needs party plates and straws.
There are 30 party plates in a pack.
There are 120 straws in a pack.
She needs **exactly** the same number of plates as straws.
What is the minimum number of each pack she must buy?
You **must** show all your working.

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Answer: ..... packs of plates and..... packs of straws

(Total 3 marks)

2. A school purchases workbooks in packs of 25 and text books in packs of 15. The school needs **exactly** the same number of workbooks as textbooks so they can be paired up for the students.
What is the minimum number of each pack that must be bought so that all the books are paired?
You **must** show all of your working.

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Answer:..... packs of workbooks and..... packs of textbooks

(Total 3 marks)

3. Tom, Sam and Matt are counting drum beats.

Tom hits a snare drum every 4 beats.
Sam hits a kettle drum every 10 beats.
Matt hits a bass drum every 12 beats.

Tom, Sam and Matt start by hitting their drums at the same time.
How many **times** are each of their beats heard before Tom, Sam and Matt **next** hit their drums at the **same** time?

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Answer: Tom beats ..... times, Sam beats ..... times and Matt beats..... times

(Total 3 marks)