

Lowest Common Multiple – Worded Problems **Answers**

1. Find the lowest common multiple of the pairs of numbers below.

a. 4 and 5 **20**

b. 6 and 4 **12**

c. 8 and 12 **24**

d. 9 and 6 **18**

e. 11 and 9 **99**

f. 15 and 20 **60**

2. Find the lowest common multiple of the sets of numbers below.

a. 2, 3 and 5 **30**

b. 5, 6 and 10 **30**

c. 11, 3 and 6 **66**

d. 10, 15 and 6 **30**

3. Oliver and James have the same number of sweets. Oliver has sorted his into plies of 12 and James has sorted his into piles of 9. What is the minimum number of sweets they could each have?

Multiples of 12: 12, 24, 36

Multiples of 9: 9, 18, 27, 36

They have at least 36 sweets.

4. Kofi is organising a barbeque. He buys bread rolls in packs of eight and burgers in packs of six. What is the minimum number of **packs** of bread rolls and burgers that he can buy so that every bread roll has a burger?

Multiples of 8: 8, 16, 24

Multiples of 6: 6, 12, 18, 24

He should buy 3 packs of bread rolls and 4 packs of burgers.

5. A smoke alarm beeps every 30 minutes and the oven timer beeps every 18 minutes. Given that they both beep at 9:00am, find the next time that they beep at the same time.

Smoke alarm: 9:00, 9:30, 10:00, 10:30

Oven timer: 9:00, 9:18, 9:36, 9:54, 10:12, 10:30

They will beep together again at 10:30am.

6. Matthew is finding the lowest common multiple of two numbers. He says, “to find the lowest common multiple, you find the product of the numbers.”

- a. Give an example where Matthew would get the right answer using his method.

Any pair of numbers which have no non-trivial common factors i.e. where the numbers are coprime.

For example: 3 and 5, 2 and 7 or 10 and 11

- b. Give an example where Matthew would get the wrong answer using his method.

Any pair of numbers which share a non-trivial common factor.

For example: 2 and 4, 6 and 8 or 10 and 15

7. The lowest common multiple of two numbers is 45. One of the numbers is 9; give two possible values for the other number.

Any two of 5, 15 or 45.

8. The lowest common multiple of two numbers is 66. Write down three possible pairs of numbers with this lowest common multiple.

Any two of:

1 and 66

3 and 22

6 and 22

11 and 66

33 and 66

2 and 33

3 and 66

6 and 33

22 and 33

2 and 66

6 and 11

6 and 66

22 and 66

9. Alijaz says the lowest common multiple of an odd and an even number will always be even. Explain why he is right.

If it is the lowest common multiple then it must be in the times table of both the odd and even number. All numbers in even times tables are even, so the number must be even.

10. Jenny has two jobs. For one job, she gets paid every 7 days and for her second job, she gets paid every 15 days. Given she gets paid by both jobs on 1st April, find the next date where she is paid by both jobs.

7 days:

1st April

8th April

15th April

22nd April

29th April

6th May

13th May

20th May

27th May

3rd June

10th June

17th June

24th June

1st July

8th July

15th July

15 days:

1st April

16th April

1st May

16th May

31st May

15th June

30th June

15th July

She will next get paid by both jobs on 15th July.

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