

Key Concept and Vocabulary

$$\begin{array}{l} 1 \times 8 = 8 \\ 2 \times 8 = 16 \\ 3 \times 8 = 24 \\ 4 \times 8 = 32 \end{array}$$

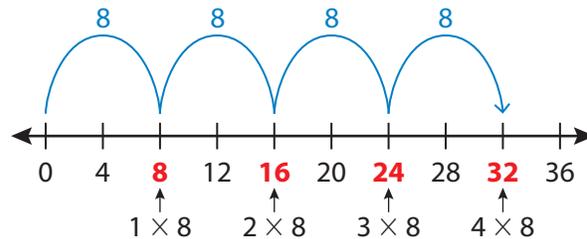
← multiples of 8

↑ factor

A whole number is a multiple of each of its factors.



Visual Model



Skill Examples

1. Is 12 a multiple of 4?

One Way: List multiples of 4: 4, 8, 12

Another Way: Use division. 12 is divisible by 4, so 4 is a factor of 12.

∴ So, 12 is a multiple of 4.

2. Is 5 a factor of 20?

One Way: List multiples of 5: 5, 10, 15, 20

Another Way: Use division. 20 is divisible by 5.

∴ So, 5 is a factor of 20.

Application Example

3. You need 60 tacos for a class fiesta. Tacos come in boxes of 3, boxes of 7, and boxes of 10. Which boxes could you buy so you have no leftover tacos?

60 is a multiple of 3 and 10.

60 is *not* a multiple of 7.

∴ You could buy boxes of 3 tacos or boxes of 10 tacos.



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4. Is 9 a multiple of 1? yes 5. Is 18 a multiple of 2? yes 6. Is 32 a multiple of 9? no
 7. Is 6 a factor of 46? no 8. Is 18 a factor of 52? no 9. Is 7 a factor of 63? yes

Tell whether 4 is a multiple or a factor of the number. Write *multiple*, *factor*, or *both*.

10. 24 factor 11. 4 both 12. 2 multiple

13. **ROCKETS** A teacher needs 35 model rockets for his students. Model rockets are sold in boxes of 3, boxes of 5, and boxes of 7. Which boxes could the teacher buy so he has no leftover rockets? boxes of 5 or boxes of 7 rockets

14. **RUNNING** A runner wants to run a total of 42 miles. She wants to run the same number of miles each day. Which numbers of miles can she run each day: 3, 4, 5, or 6? How many days will it take her to run the 42 miles? Explain. 3 or 6 miles; If she runs 3 miles each day, it will take her 14 days because $42 \div 3 = 14$. If she runs 6 miles each day, it will take her 7 days because $42 \div 6 = 7$.