

Pre-Algebra Worksheet 2 Factors: Answers

1. Which of the following statements are true?
(a) 3 is a factor of 18. (b) 3 is a multiple of 18. (c) 18 is a multiple of 3. (d) 27 has 7 as a factor. (e) 35 has 5 as a factor. (f) 12 has -3 and -2 as factors.

Answer:

(a) 3 is a factor of 18: $3 \times 6 = 18$

(b) 3 is not a multiple of 18 because 3 divided by 18 is not a whole number with no remainder

(c) 18 is a multiple of 3 because 18 is divisible by 3 with no remainder: $18 \div 3 = 6$

(d) 7 is not a factor of 27: $27 \div 7 = 3$ with remainder 6

(e) 5 is a factor of 35: $35 \div 5 = 7$ with no remainder

(f) -3 and -2 are both factors of 12: $12 \div -3 = -4$, and $12 \div -2 = -6$.

2. A *perfect number* is equal to the sum of all of its positive factors other than itself (all factors, not just prime factors). For example, 6 is perfect because its positive factors are 1, 2, 3, 6, and $1 + 2 + 3 = 6$. The next perfect number after 6 is between 20 and 30. What is it?

Answer:

Let's look at the factors of the numbers from 20 to 30, excluding the number itself as a factor:

20: factors 1,2,4,5,10: sum of factors $1+2+4+5+10 = 22$

21: factors 1,3,7: sum = 11