Primes & factors

Name _____ Date _____

Write each number as a product of prime numbers.

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Example Write 84 as a product of prime numbers.

1. Split it into two factors: 84 = 2 × 42.
2. Keep splitting until every factor is prime: 42 = 2 × 21, 21 = 3 × 7.

Answer: 84 = 2 × 2 × 3 × 7

1. 40 = ☐
2. 60 = ☐
3. 112 = ☐
4. 45 = ☐
5. 144 = ☐
6. 52 = ☐

Find the greatest common factor (GCF).

Example Find the GCF of 16 and 40.

1. Factors of 16: 1, 2, 4, 8, 16.
2. Factors of 40: 1, 2, 4, 5, 8, 10, 20, 40. The greatest one in both lists is 8.

Answer: 8

7. GCF of 60 and 50 = ☐
8. GCF of 48 and 8 = ☐
9. GCF of 11 and 44 = ☐
10. GCF of 50 and 60 = ☐
11. GCF of 35 and 28 = ☐
12. GCF of 28 and 21 = ☐

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Multiples & factoring

Name _____ Date _____

Find the least common multiple (LCM).

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Example Find the LCM of 6 and 8.

1. Multiples of 6: 6, 12, 18, 24, 30 ...
2. Multiples of 8: 8, 16, 24 ... The first number in both lists is 24.

Answer: 24

1. LCM of 8 and 2 = ☐
2. LCM of 9 and 4 = ☐
3. LCM of 8 and 9 = ☐
4. LCM of 2 and 9 = ☐
5. LCM of 10 and 11 = ☐
6. LCM of 7 and 8 = ☐

Take out the GCF and write the sum with brackets.

Example Factor 18 + 45 using the GCF.

1. The GCF of 18 and 45 is 9.
2. 18 = 9 × 2 and 45 = 9 × 5, so take the 9 outside the brackets.

Answer: 9 × (2 + 5)

7. 50 + 90 = ☐ × (☐ + ☐)
8. 7 + 63 = ☐ × (☐ + ☐)
9. 63 + 35 = ☐ × (☐ + ☐)
10. 35 + 28 = ☐ × (☐ + ☐)
11. 80 + 70 = ☐ × (☐ + ☐)
12. 7 + 56 = ☐ × (☐ + ☐)

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Answers

Answers are in the same order as the boxes.

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1. 2 × 2 × 2 × 5
2. 2 × 2 × 3 × 5
3. 2 × 2 × 2 × 2 × 7
4. 3 × 3 × 5
5. 2 × 2 × 2 × 2 × 3 × 3
6. 2 × 2 × 13
7. 10
8. 8
9. 11
10. 10
11. 7
12. 7

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1. 8
2. 36
3. 72
4. 18
5. 110
6. 56
7. 10 × (5 + 9)
8. 7 × (1 + 9)
9. 7 × (9 + 5)
10. 7 × (5 + 4)
11. 10 × (8 + 7)
12. 7 × (1 + 8)

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