

**(2) Practice****Practice**

Practice B, p. 22

**Reinforcement**

**Extra Practice**, Unit 1, Exercise 4, pp. 23-24

**Tests**

**Tests**, Unit 1, 4A and 4B, pp. 15-18

**Enrichment**

Have your student work on the following problems (appendix p. a11) and then discuss solutions.

1. A square number is a number that is a product of two factors that are the same. Since  $5 \times 5 = 25$ , 25 is a square number. Find the smallest whole number that 180 must be multiplied by so that the product is a square number.

First find the prime factorization of 180.  $180 = 2^2 \times 3^2 \times 5$ . So if we multiply 180 by 5, the new number, 900, is a square number.  $900 = 2^2 \times 3^2 \times 5^2 = 30^2$ .

2. What is the smallest possible number which, when divided by 2, 3, 4, 5, 6, or 7, will give a remainder of 1, 2, 3, 4, 5, and 6, respectively.

The remainder is 1 less than the divisor. If we add 1 to the number, there will be no remainder when it is divided by 2, 3, 4, 5, 6, and 7. So 1 more than the number is the lowest common multiple of 2, 3, 4, 5, 6, and 7, which is 420. The number is 419.

3. The prime factorization of two numbers are  $3^3 \times 5 \times 7$  and  $2 \times 3^2 \times 7^2$ . Give 3 common factors of the two numbers other than 3 and 7.

Common factors are 9 ( $3 \times 3$ ), 21 ( $3 \times 7$ ), and 63 ( $3 \times 3 \times 7$ ).

1. (a) 1, 2, 4, 7, 8, 14, 28, 56  
(b) 1, 2, 3, 4, 6, 8, 9, 12, 18, 24, 36, 72  
(c) 1, 2, 3, 4, 6, 9, 12, 18, 27, 36, 54, 108  
(d) 1, 2, 3, 4, 5, 6, 8, 10, 12, 15, 20, 24, 30, 40, 60, 120
2. (a) 12            (b) 3            (c) 12
3. (a) 5, 10, 15, 20  
(b) 7, 14, 21, 28  
(c) 8, 16, 24, 32  
(d) 9, 18, 27, 36
4. (a) 15            (b) 24            (c) 36
5. (a) 14            (b) 24  
(c) 33            (d) 15  
(e) 29            (f) 22
6. (a) and (c)            (42 and 128)
7. (b) and (c)            (69 and 252)
8. (a), (c), and (d)            (40, 195, and 660)
9. (a)  $5^2 \times 11^3$             (b)  $2^3 \times 13^2 \times 31$   
(c)  $2 \times 3^2 \times 5^2 \times 19^2$
10. (a) 432            (b) 196            (c) 1089
11. (a)  $28 = 2^2 \times 7$   
(b)  $54 = 2 \times 3^3$   
(c)  $88 = 2^3 \times 11$   
(d)  $108 = 2^2 \times 3^3$