

1. Determine the prime factorization of each of the following:
a) 1260
b) 5400

2. Determine the greatest common factor and least common multiple of
a) 64 and 120
b) 40, 48, and 56

GCF= _____

LCM= _____

GCF= _____

LCM= _____

3. Use prime factorization to determine
a) the square root of 1024.

- b) the cube root of 9261.

4. Is 4096 a perfect square, a perfect cube, both, or neither? Show work to justify your answer.

5. Determine all perfect squares and perfect cubes between 200 and 300.

perfect squares: _____

perfect cubes: _____

6. Factor each of the following by removing the GCF:

a) $3x - 15$

b) $4x - 12x^2 + 8x^3$

c) $15x^3y^2 - 25x^2y^4 - 30x^4y^3$

7. Expand and simplify:

a) $(x+4)(x+2)$

b) $(x-5)(x+7)$

c) $(2x-1)(x+3)$

d) $(3x-4)(2x-1)$

8. Factor:

a) $x^2 + 6x + 8$

b) $x^2 - 9x + 20$

c) $x^2 - 3x - 18$

d) $x^2 - 5x + 4$

9. Factor completely:

e) $5x^2 + 5x - 150$

f) $-2x^2 + 10x + 48$