GCF and Simplifying Fractions

1. Find the greatest common factor of these pairs of numbers.

a. 2 and 24 **b.** 3 and 9 **c.** 10 and 15

d. 15 and 20 **e.** 14 and 24 **f.** 14 and 36

g. 18 and 30 **h.** 21 and 56 **i.** 21 and 33

j. 56 and 84 **k.** 55 and 65 **l.** 12 and 120

2. Find the greatest common factor when the prime factorization is given.

a. $2 \times 3^2 \times 5$ and $2 \times 3 \times 5$ **b.** $5^3 \times 7^2$ and $2 \times 5 \times 7$

c. $2^4 \times 11 \times 23$ and $2^2 \times 5 \times 11$ **d.** $2 \times 7^2 \times 11^2$ and $2^3 \times 5^2 \times 7$

3. Assume that p and q are primes. Find the greatest common factor of these pairs of numbers.

a. p and pq **b.** pq and p^4q^5 **c.** $5p^2q^5$ and $4p^3q^3$

4. Simplify the fractions.

a. $\frac{21}{36}$	**b.** $\frac{45}{55}$	**c.** $\frac{25}{65}$	**d.** $\frac{23}{17}$
e. $\frac{14}{16}$	**f.** $\frac{18}{32}$	**g.** $\frac{50}{24}$	**h.** $\frac{15}{60}$
i. $\frac{12}{38}$	**j.** $\frac{40}{36}$	**k.** $\frac{72}{80}$	**l.** $\frac{105}{35}$

5. Find the GCF.

a. 220 and 400 **b.** 350 and 1,050 **c.** 125 and 150

d. 24 and 124 **e.** 16 and 160 **f.** 99 and 189

6. Make a fraction from each pair of numbers in 5), using the first number as the numerator and the second number as the denominator. Then simplify those fractions.

7. Simplify these rational expressions.

a. $\frac{7x}{7}$ **b.** $\frac{4a}{8}$ **c.** $\frac{2y}{6}$ **d.** $\frac{10c}{5}$ **e.** $\frac{26x}{12}$

f. $\frac{ab}{b}$ **g.** $\frac{ca}{4a}$ **h.** $\frac{2x}{14y}$ **i.** $\frac{24}{40x}$ **j.** $\frac{25xy}{30x}$