

San Jose State University  
Department of Mathematics, College of Science  
Fall 2009  
MATH 42, Discrete Mathematics  
Answers of HW6

Please ask if you do not understand the answers.

Please report if you find any errors, typos.

**3.5 # 3**

- a)  $2^3 \cdot 11$
- b)  $2 \cdot 3^2 \cdot 7$
- c)  $3^6$
- d)  $7 \cdot 11 \cdot 13$
- e)  $11 \cdot 101$
- f)  $2 \cdot 3^3 \cdot 5 \cdot 7 \cdot 13 \cdot 37$

**3.5 # 6**

There are 24 zeros at the end of the number  $100!$

**3.5 # 9**

3, 5, 7 are consecutive odd positive primes.

**3.5 # 20**

- a)  $2^2 \cdot 3^3 \cdot 5^2 = 2700$
- b)  $2 \cdot 3 \cdot 11 = 66$
- c) 17
- d) 1
- e) 5
- f)  $2 \cdot 3 \cdot 5 \cdot 7 = 210$

**3.5 # 26**

$$\text{lcm} = \frac{\text{product}}{\text{gcd}} = \frac{2^7 3^8 5^2 7^{11}}{2^3 3^4 5} = 2^4 \cdot 3^4 \cdot 5 \cdot 7^{11}$$

**3.6 # 2**

- a) 101000001
- b) 1111111111
- c) 11000100100011000

**3.6 # 3**

- a) 31
- b) 513

c) 341

d) 26896

**3.6 # 9**

B7B

**3.6 # 20**

1

**3.6 # 24**

a) 1

b) 1

c) 1

d) 139

e) 1

f) 1