MTH 122 2nd Exam Review Guide Partial Answer Key Semester 082

1. $a = 6,\ b = 2$ $a = 14, b = 26$

2. 8, 13, 23 and many others!

3. $11^2 \cdot 8$

4. 5, 7, 25

5. gcd = $2(3^2)$ and lcm = $2^2 3^4 (5)(7)$

6. See text, notes for examples

7. a) 41 b) 140 c) 1010 1100 1000 d) 1111 1010 e) FA

8. $(26^2 + 26) \cdot (10^4 + 10^5)$

9. a) 2^5 b) 2^4 c) $2^7 + 2^6 - 2^5$

10. a) 3 b) 4

11. a) $12 \cdot 11 \cdot 10$

b) $\frac{12!}{9!3!} = 220$

13. a) 8; b) 1/8; c) 7/8

14. d

15. a) 0.44 b) independent c) 0.8

16. a) Three of a kind C(13,1)C(4,3)C(12,2)C(4,1)C(4,1) / C(52,5), approx. 0.021128.
b) Four of a kind C(13,1)C(48,1)/ C(52,5), approx 0.000240.
c) Full House C(13,1)C(4,3)C(12,11)C(4,2)/C(52,5), approx. 0.001441.
d) Two Pairs C(13,2)C(4,2)C(4,2)C(11,1)C(4,1)/ C(52,5), approx. 0.04754.
e) Royal Flush 4/ C(52,5), approx 0.00000154.

17. a) 36 b) { (4,6), (6,4), (5,5) } c) 1/12

(Added for Section 32.8 matrices)
18.

$$A=\begin{pmatrix}1&0&0&0\\0&1&0&0\\0&0&1&0\\0&0&0&1\end{pmatrix} \qquad B=\begin{pmatrix}2&3&1&0\\3&1&1&0\\1&0&1&1\end{pmatrix} \quad C=\begin{pmatrix}1&-2&5\\-2&2&4\\5&4&3\end{pmatrix}$$

For the above matrices:

a) BA CB
b) A
c) A, C
d) A, C

19. Let A be a matrix with dimensions 4×20; B be a matrix with dimensions 20×3; C be a matrix with dimensions 3×10.

a) 4 X 3 b) 20 X 10
c) (AB) C (360 mult. vs. 1400 mult.)

11. Let A = $\begin{pmatrix}1&1\\1&0\end{pmatrix}$. Let B = $\begin{pmatrix}0&1\\0&1\end{pmatrix}$.

a) join$\begin{pmatrix}1&1\\1&1\end{pmatrix}$

b) meet. $\begin{pmatrix}0&1\\0&0\end{pmatrix}$

c) $\begin{pmatrix}0&1\\0&1\end{pmatrix}$