Final Exam Friday, August 2

- 12:00 – 1:50 p.m. in Lawson 151
- Comprehensive
- Bring #2 pencil and picture ID.
- You may use a calculator.
- You may NOT use cell phones or other wireless devices.
- You may NOT use books or notes.

Formulas provided on exam:

$$A = P(1 + rt)$$

$$A = P(1 + i)^{nt}$$

$$A = d\left[\frac{(1+i)^{nt} - 1}{i}\right]$$

19. At the end of each month, Juanita deposits $50 into a savings account earning 4.5% interest compounded monthly. How much is the account worth at the end of five years?

A) $3357   B) $3135   C) $ 3755   D) $3522

$$A = d \left[\frac{(1+i)^{nt} - 1}{i} \right]$$

$i = 0.045/12 = 0.00375, \quad nt = 12 \times 5 = 60, \quad d = 50$

$50 \times (1.00375^{60} - 1)/0.00375 = 3357$

20. May takes out a conventional loan to purchase a car. The interest rate is 6.8% compounded monthly and May has six years to repay the $15,000 she borrowed. What are May's monthly payments?

A) $143.19   B) $209.00   C) $254.30   D) $435.22

$$P(1+i)^{nt} = d \times \left(\frac{(1+i)^{nt} - 1}{i} \right)$$

$i = 0.068/12 = 0.0056667, \ nt = 12 \times 6 = 72, \ P = 15,000$

$15,000 \times 1.0056667^{72} = d(1.0056667^{72} - 1)/0.0056667$

$d = 22,531.14/88.60170 = 254.30$

21. A pair of fair dice are rolled. What is the probability that the sum of the values on the dice is nine?

A) 1/4   B) 1/9   C) 4/9   D) 5/36

22. In a poll of 2609 voters, 75.1% said they favored increased funding for Pell grants. Find a 95% confidence interval for the true population proportion.

A) 70.1% to 80.1%   B) 73.4% to 76.8%
C) 74.2% to 76.0%   D) 73.1% to 77.1%

23. The exam scores of fourteen students are listed below:

34, 65, 78, 76, 92, 81, 54, 78, 72, 85, 43, 90, 82, 39

Find the five-number summary for these data.

A) 34, 65, 78, 82, 92

B) 34, 59.5, 78, 83.5, 92

C) 34, 54, 77, 82, 92

D) 34, 48.5, 77, 83.5, 92

24. At a certain discount store, the number of people in checkout lines varies. The probability model for the number of people in a randomly chosen line is

x	0	1	2	3
$P(x)$	0.24	0.36	0.32	0.08

What is the expected number of people in a randomly chosen line?

A) 1.5   B) 1.48   C) 1.24   D) 0.76

25. A flashlight manufacturer sets aside a production line for the assembly of 2000 flashlights to fill a special order. Ninety of these flashlights are selected at random from the production line to be tested, and 15 are found to be defective. The sample is

A) the 15 defective flashlights.
B) the 90 flashlights tested.
C) the 2000 flashlights produced for this order.
D) all flashlights produced by the manufacturer

26. A study finds that the heights of adult American women are normally distributed with a mean of 63.5 inches and a standard deviation of 2.5 inches. What percentage of adult American women are taller than 66.0 inches?

A) 2.5%   B) 34%   C) 16%   D) 47.5%

27. A pet store has seven puppies, including four poodles, two terriers, and one retriever. If Rebecca and Aaron, in that order, each select one puppy at random, without replacement, find the probability that both select a poodle.

A) 2/3   B) 1/2   C) 2/7   D) 16/49