AFM Exam Review Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Find the domain of the function: 

a)  b)  c)  d) 

2. The graph is increasing between what interval/s?

 a)  b)  c) (-1.73, 1.73) d) (-13.39, 7.39)

3. Evaluate the piecewise function at f(0), f(2), and f(3). 

 a) f(0) = -1 b) f(0) = 6 c) f(0) = 0 d) f(0) = 6

 f(2) = 6 f(2) = 7 f(2) = 6 f(2) = 7

 f(3) = 11 f(3) = 11 f(3) = cannot determine f(3) = 7

4. Graph the previous piecewise function and state the domain and range.

5. A silk-screen shop charges an initial fee of $10 to create the silk screen and $8.50 per shirt for the first 25 shirts. If you decide to purchase more than 25 shirts, the price goes down to $7.75 per shirt (after the first 25 shirts are purchased). Write a function that gives the cost, *C*, for an order of *x* shirts. How much does it cost to purchase 20 shirts? 40 shirts?

6. The surface area of a sphere varies directly with the square of the radius. If a sphere of radius 3 has a surface area of 113.1, find the coefficient of variation.

a) 37.7 b) 12.57 c) 1017.9 d) 339.3

7. What is the degree of f(x) = $\sqrt{x^{3}}$ ?

a) 3 b) 3.5 c) 2/3 d) 1.5

8. Choose the best description of: f(x) = $\frac{4}{x^{3}}$

a) even b) odd c) neither d) both

9. The amount of water wasted varies directly with the amount of time the faucet drops. If a dripping faucet wastes one cup of water if it drips for four minutes, then how long must the faucet drip to waste 6.5 cups of water?

a) 1.625 minutes b) 26 minutes c) 24 minutes d) 104 minutes

11. Change from logarithmic form to exponential form: 

 a)  b)  c)  d) 

12. Convert from exponential form to logarithmic form: 

 a)  b)  c)  d) 

13. Solve 46*x* = 496.

 a) 0.6472 b) 0.7462 c) 3.6413 d) 4.477

14. The graph y = 2(3)x-1 has an asymptote of \_\_\_\_\_\_\_\_\_\_.

 a) y = 1 b) y = 0 c) x = 1 d) x = -1

15. Solve the logarithmic equations, accurate to 4 decimal places. (3 problems here!)

 a)  b)  c) 

16. The graph has an asymptote of \_\_\_\_\_\_\_\_\_\_.

 a) y = 2 b) y = 1 c) x = 1 d) x = 2

17. Find the balance of a $500 investment after 18 years earning 7.9% interest compounded continuously.

 a) $502.20 b) $541.10 c) $2146.32 d) $2072.70

18. What interest rate is required for an investment with continuously compounded interest to double in 5 years?

 a) 3.47% b) 6.93% c) 13.86% d) 3.86

19. Determine the amount of money in a money market account providing an annual rate of 7% compounded daily if George invested $2500 and left it in the account for 10 years.

 a) $4917.88 b) $4915.25 c) $4974.47 d) $5034.04

20. The value of a new car is $29,000 and depreciates 14% each year. Write an exponential function and find the value after 5 years.

21. The number of bacteria in a culture is modeled by the function, *n(t) = 500e0.45t*. How many bacteria are in the culture after 3 hours?

31. If ∠*P* = 27°, ∠R = 90°, and *r* = 11, find *p*.

 a) 24.2 b) 5.6 c) 9.8 d) 5.0

32. The angle of elevation of a ladder leaning against a wall is 55°. The ladder is 30 feet long. How high up the wall does it reach?

a) About 52.30 ft b) about 17.21 ft c) about 24.57 ft d) about 42.8 ft

33.  In ∆ABC, find *c* if ∠*A* = 36°, ∠*B* = 101°, and *b* = 42.7.

a) about 40.2 b) about 29.7 c) about 25.3 d) about 31.8

34. Determine the number of possible solutions for ∆ABC, given ∠*A* = 40°, *a* = 7, and *b* = 9.

a) two b) one c) three d) none

35. Determine the number of possible solutions for ∆ABC, given *a* = 7, *b* = 3, and ∠*A* = 115°.

a) two b) one c) three d) none

36. In ∆ABC, given *a* = 22, *b* = 39 and *c* = 19, find *B*.

a) about 144° b) about 126° c) about 36° d) about 54°

37. Two motorists start at the same point and travel in 2 straight courses. One travels at a speed of 50 mph on a bearing of N25°E and the other at 60 mph on a bearing of S60°E. How far apart will they be after 4 hours?

38. A geologist measured a 43° angle of elevation to the top of a volcano crater. After moving 0.25 km farther away, the angle of elevation was 38°. Find the height of the volcano crater.

43. Find an angle between 0 and 360° that is coterminal to -2100°.

a) 300° b) 30° c) 60° d) -300°

46. Convert to radians: 

a)  b)  c)  d) 