Material for Exam 3 comes from Chapter 10.1, 10.2, 10.3, 13.2, 8.1, 8.2, 8.3, 8.4, 8.5, 8.6

The exam will have 2 sections: Multiple Choice and Short Answer. Sample questions for the Short Answer section are included below.

**Short Answer Questions:** For calculations, show how you set-up each problem to receive full credit.

1. (a) complement = 42° and supplement = 132°.
   (b) The two angles are 45° and 135°.

2. angle 1 = 50°, angle 2 = 90°, angle 3 = 50°

3. angle 1 = 55°, angle 2 = 65°, angle 3 = 60°, angle 4 = 65°, angle 5 = 60°
   angle 6 = 120°, angle 7 = 60°, angle 8 = 60°, angle 9 = 55°, angle 10 = 55°

4. \( x = 6m \).

5. Use algebraic equations to solve the following problems.
   (a) \( c = 39m \)
   (b) Angles measure 40°, 60°, 80°

6. The tree’s height is \( x = 71.67 \) feet?

7. Perimeter is 74 m.

8. 540°

9. angle 1 = 165°

10. (a) One hexagon and 4 equilateral triangles.
    (b) 5 angles total: angle of hexagon = 120°, angle of each of the four triangles = 60°.

11. width = 160 ft, length = 360 ft

12. angles of measure \( x = 115° \), angles with measure \( x + 5 = 120° \).

13. (a) Every entry in the table is in the set \( \{e, p, q, r, s, t\} \)
    (b) \( (r \circ t) \circ q = p \circ q = e \)
        \( r \circ (t \circ q) = r \circ r = e \)
    (c) \( e \)
    (d) The inverse of \( r \) is \( r \).
14. \((6 + 5) \text{ (mod 6)} = 5\)

15. (a) discount amount = $103.20  
    (b) sale price = $756.80  
    (c) tax paid = $60.54  
    (d) total cost = $817.34

16. The percent decrease is 15%.

17. (a) The interested owed = $318.75.  
    (b) The loan’s future value = $5318.75

18. 9%

19. \(P = 8917.20\)

20. (a) Loan’s discount = $93.33  
    (b) Net amount of money you receive = $1906.67  
    (c) Loan’s actual interest rate = 7.3%

21. (a) interest paid = $247.50  
    (b) Future value of the loan = $4247.50

22. (a) compounded semianually = $13116.51  
    (b) compounded quarterly = $13140.67  
    (c) compounded monthly = $13157.04  
    (d) compounded continuously = $13165.31

23. (a) Future value after one year = $10457.65  
    (b) Effective annual yield = 4.6%

24. Option 1: APY 5.58% and Option 2: APY 5.55%  
    Option 1 slightly better investment.

25. (a) 52 week high = $73.25 and 52 week low = $45.44  
    (b) dividend = $840  
    (c) annual return for the dividends alone is 2.2% which is lower than a bank offering a 3% interest rate.  
    (d) annual earnings per share = $3.26

26. (a) Option 1: Future value = $79599, Interest = $49599  
    (b) Option 2: Future value = $49599, Interest = $19599  
    Invest in Option 1!

27. (a) Future value = $11617  
    (b) Interest = $1617

28. (a) deposit $401 every six months  
    (b) deposits = $3208 and interest = $292
29. (a) Amount financed = $21500  
   (b) Total installment price = $33900  
   (c) Finance charge = $6900  
   (d) Finance charge per $100 = $32.09  
   (e) Using Table 8.5 the APR is 11.5%  
   (f) Interest saved = $1232.94  
   (g) Payoff amount = $10392.06  

30. (a) the unpaid balance method = $7.50  
    (b) the previous balance method = $45.00  
    (c) the average daily balance method = $13.75  

31. Greatest total cost is Mortgage A  
   (a) Mortgage A:  monthly payment: = $798  cost of points: = $1200  interest paid: = $167280  total cost: = $170480  
   (b) Mortgage B:  30-year fixed at 6.5% with closing costs of $1500 and four points.  
      monthly payment: = $758  cost of points: = $4800  interest paid: = $152880  total cost: = $159180  

32. (a) monthly payment = $210, total interest = $840  
    (b) monthly payment = $137, total interest = $732  
    (c) Bank loan, lower monthly payment and less interest paid overall. (con - longer time)