ART 1210: Math for Visual Arts

PUTTING IT ALL TOGETHER

The last third of the semester has been spent learning various ways to price portions of a printing job. Answer the following questions using the forms attached to combine everything we have learned about job costing to create one complete job estimate for the on press portion of a printing job. You may need to reference past lectures, homework, and quizzes to refresh yourself with the material.

PROBLEM 1: Your company is going to print 250,000 11in x 17in wall posters. They print 4/0 (CMYK over no ink) on 100# cover stock. Ink coverage is: C=35%, M=82%, Y=11%, K=9%. Ink is priced at $6/lb for all colors. Ink coverage (spread) for all colors is 20,000 in² per lb. You must purchase and use 19in x 25in sheets of paper. The paper is priced at $89/CWT and this job will run on a ManRolland 300 press at 11,000 IMP/hr. The BHR for the press is $347/hr.

Answer the following questions based on the information provided to you above.

PAPER PRICING
1. How many 11in x 17in wall posters will fit out on your PSS? ______________________
2. How many PSS are required for this job? ______________________
3. How much will your stock weigh? ______________________
4. How much will your stock cost? ______________________

INK COVERAGE
5. What is the total area of 1 PSS? ______________________
   CYAN:
   6. What is the total coverage area of CYAN on just one PSS? ______________________
   7. What is the total coverage area of CYAN ink for ALL PSS? ______________________
   8. How many lbs. of CYAN ink are required for this job? ______________________
   9. How much will the CYAN ink cost? ______________________
   MAGENTA:
   10. What is the total coverage area of MAGENTA on just one PSS? ______________________
   11. What is the total coverage area of MAGENTA ink for ALL PSS? ______________________
   12. How many lbs. of MAGENTA ink are required for this job? ______________________
   13. How much will the MAGENTA ink cost? ______________________
   YELLOW:
   14. What is the total coverage area of YELLOW on just one PSS? ______________________
   15. What is the total coverage area of YELLOW ink for ALL PSS? ______________________
   16. How many lbs. of YELLOW ink are required for this job? ______________________
   17. How much will the YELLOW ink cost? ______________________
   BLACK:
   18. What is the total coverage area of BLACK on just one PSS? ______________________
   19. What is the total coverage area of BLACK ink for ALL PSS? ______________________
   20. How many lbs. of BLACK ink are required for this job? ______________________
   21. How much will the BLACK ink cost? ______________________

PRESS IMPRESSIONS
22. What is the total cost of the ink portion of this job? ______________________
23. How many sheets of paper are required for this job? ______________________
24. How many sides of the sheet are being printed? ______________________
25. How many press impressions are required (for all PSS)? ______________________
26. How many hours will this job be on press? ______________________
27. What is the total cost for the press impressions portion of the job? ______________________

PUTTING IT ALL TOGETHER
28. What is the total cost for the entire press portion of this job? ______________________
   (paper + ink + press impressions)
PROBLEM 2: Your company is going to print 16,000,000 8.5in x 11in flyers. They print 2/1 (Blue + Black over Black) on 80# gloss coated text weight stock. Ink coverage is: Blue=22%, Black (front)=11%, Black (back)=6%. Ink is priced at $4.75/lb for all colors. Ink coverage (spread) for all colors is 17,000 in² per lb. You must purchase and use 23in x 35in sheets of paper. The paper is priced at $61.25/CWT and this job will run on a Heldleberg 9000 printing press at 13,500 IMP/hr. The BHR for the press is $509/hr.

Answer the following questions based on the information provided to you above.

PAPER PRICING
29. How many 8.5in x 11in flyers will fit out on your PSS? ____________________________
30. How many PSS are required for this job? ________________________________
31. How much will your stock weigh? ________________________________________
32. How much will your stock cost? ________________________________________

INK COVERAGE
33. What is the total area of 1 PSS? _________________________________________
   BLUE:
34. What is the total coverage area of BLUE on just one PSS? _________________
35. What is the total coverage area of BLUE ink for ALL PSS? ________________
36. How many lbs. of BLUE ink are required for this job? __________________
37. How much will the BLUE ink cost? ______________________________________
   BLACK (front):
38. What is the total coverage area of BLACK (front) on just one PSS? _________
39. What is the total coverage area of BLACK (front) ink for ALL PSS? __________
40. How many lbs. of BLACK (front) ink are required for this job? ______________
41. How much will the BLACK (front) ink cost? ______________________________
   BLACK (back):
42. What is the total coverage area of BLACK (back) on just one PSS? _________
43. What is the total coverage area of BLACK (back) ink for ALL PSS? __________
44. How many lbs. of BLACK (back) ink are required for this job? ______________
45. How much will the BLACK (back) ink cost? ______________________________
46. What is the total cost of the ink portion of this job? _______________________

PRESS IMPRESSIONS
47. How many sheets of paper are required for this job? ______________________
48. How many sides of the sheet are being printed? __________________________
49. How many press impressions are required? ______________________________
50. How many hours will this job be on press? ______________________________
51. What is the total cost for the press impressions portion of the job? __________

PUTTING IT ALL TOGETHER
52. What is the total cost for the entire press portion of this job? ______________
   (paper + ink + press impressions)