The following aids can be used:

non-programmable calculators without communication- or text processing function, ruler.

> Hint: A maximum of 120 points can be reached from solving the 5 problem sets below. The numbers in brackets tell you how many points can be obtained from each problem.

Problem 1 (25 points):

Tiger Pride produces two product lines: T-shirts and Sweatshirts. Product profitability is analyzed as follows:

	T-SHIRTS	SWEATSHIRTS
Production and sales volume	60,000 units	35,000 units
Selling price	$16.00	$29.00
Direct material	$ 2.00	$ 5.00
Direct labor	$ 4.50	$ 7.20
Manufacturing overhead	$ 2.00	$ 3.00
Gross profit	$ 7.50	$13.80
Selling and administrative	$ 4.00	$ 7.00
Operating profit	$ 3.50	$ 6.80

Tiger Pride's managers have decided to revise their current assignment of overhead costs to reflect the following ABC cost information:

Activity	Activity cost	Activity-cost driver
Supervision	$100,920	Direct labor hours (DLH)
Inspection	$124,000	Inspections

Activities demanded	
T-SHIRTS	SWEATSHIRTS
0.75 DLH/unit	1.2 DLH/unit
45,000 DLHs	42,000 DLHs
60,000 inspections	17,500 inspections

Required:

1. Under the revised ABC system, what is the activity-cost driver rate for the supervision activity?

2. What are the supervision costs allocated to Sweatshirts?

3. What are the total overhead costs allocated to Sweatshirts?

4. Using the ABC system, next year's estimates show manufacturing overhead costs will total $228,300 for 52,000 T-shirts. If all other T-shirt costs and sales prices remain the same, what is the profit to be expected per t-shirt?

Problem 2 (30 points):

Munoz, Inc. produces a special line of plastic toy racing cars. Munoz, Inc. produces the cars in batches. To manufacture a batch of the cars, Munoz, Inc. must set up the machines and molds. Setup costs are batch-level costs because they are associated with batches rather than individual units of products. A separate Setup Department is responsible for setting up machines and molds for different styles of car.

Setup overhead costs consist of some costs that are variable and some costs that are fixed with respect to the number of setup-hours. The following information pertains to June 2004.

	Actual Amounts	Static-budget Amounts
Units produced and sold	15,000	11,250
Batch size (number of units per batch)	250	225
Setup-hours per batch	5	5.25
Variable overhead cost per setup-hour	$40	$38
Total fixed setup overhead costs	$14,400	$14,000

Required:
1. Calculate the efficiency variance for variable setup overhead costs.
2. Calculate the spending variance for variable setup overhead costs.
3. Calculate the flexible-budget variance for variable setup overhead costs.
4. Calculate the spending variance for fixed setup overhead costs.
5. Calculate the production-volume variance for fixed setup overhead costs.

Problem 3 (25 points):

The following data are available for Ruggles Company for the year ended September 30, 20x4.

Sales:	24,000 units at $50 each
Expected and actual production:	30,000 units
Manufacturing costs incurred:	
Variable:	$525,000
Fixed:	$372,000
Nonmanufacturing costs incurred:	
Variable:	$144,800
Fixed:	$77,400
Beginning inventories:	none

Required:

1. Determine operating income using the variable-costing approach.
2. Determine operating income using the absorption-costing approach.
3. Explain why operating income is not the same under the two approaches.

Problem 4 (25 points):

Improvement Corp. hires a new employee. As the jobs to be done need some experience, management estimates the learning curve based on the following numbers: The first job performed by a new employee averages 40 hours and the second job averages 36 hours. Assume all jobs to be equal in size.

Required:

1. What is the learning-curve percentage, assuming the cumulative average-time method?

2. What is the time for a new employee to build 16 units with this learning curve using the cumulative average-time method? You may use an index of -0.074.

Problem 5 (15 points):

Silver Lake Cabinets is approached by Ms. Jenny Zhang, a new customer, to fulfill a large one-time-only special order for a product similar to one offered to regular customers. The following per unit data apply for sales to regular customers:

Direct materials	$100
Direct labor	125
Variable manufacturing support	60
Fixed manufacturing support	75
Total manufacturing costs	360
Markup (60%)	216
Targeted selling price	$576

Silver Lake Cabinets has excess capacity. Ms. Zhang wants the cabinets in cherry rather than oak, so direct material costs will increase by $30 per unit.

Required:

1. For Silver Lake Cabinets, what is the minimum acceptable price of this one-time-only special order?

2. Other than price, what other items should Silver Lake Cabinets consider before accepting this one-time-only special order?

3. How would the analysis differ if there was limited capacity?