AGA company manufactures and sells a product for $20 per Kg. The data for the year 2016 is given below:

* Sales in kgs: 75,000 kgs
* Finished goods inventory at the beginning of the period: 12,000 kgs
* Finished goods inventory at the closing of the period: 17,000 kgs

**Manufacturing costs:**

* [Variable cost](https://www.accountingformanagement.org/variable-fixed-and-mixed-costs/): $8 per Kg
* Fixed manufacturing overhead cost: $320,000 per year

**Marketing and administrative expenses:**

* Variable expenses: $2 per Kg of sale
* Fixed expenses: $300,000 per year

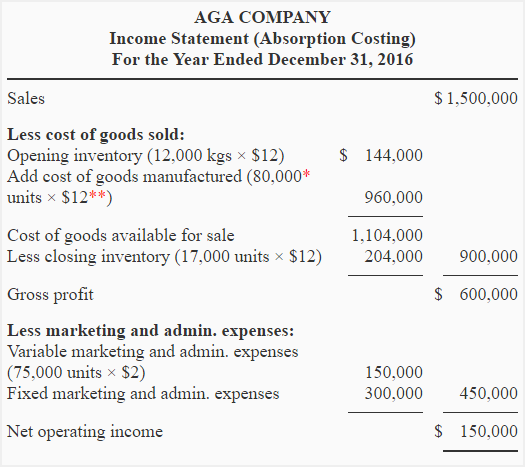
**Required:**

1. [Income statement](https://www.accountingformanagement.org/income-statement/) using absorption and variable costing methods.
2. Explanation of the cause of difference in net operating income under two concepts.

**Solution**

**(1) Income statements:**

**(a) Absorption costing income statement:**

[](https://www.accountingformanagement.org/wp-content/uploads/2012/08/exercise-5-vaac-img1.png)

\***Production for the year 2016:**

Units manufactured during 2016 = Units sold + Units in closing inventory – Units in opening inventory

= 75,000 kgs + 17,000 kgs – 12,000 kgs

= 80,000 kgs

\*\***Manufacturing expenses per unit:**

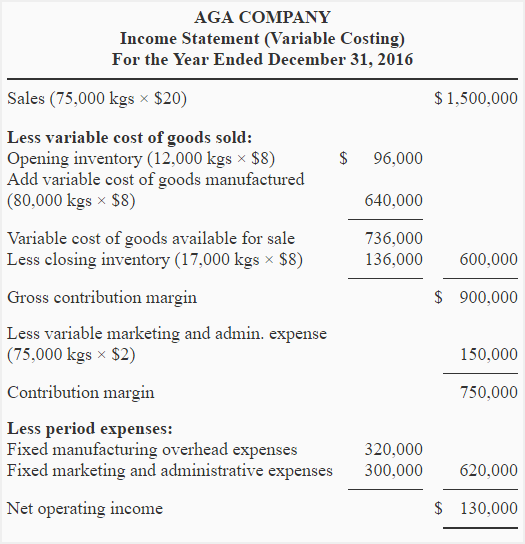
Variable expenses + Fixed expenses

= $8 + ($320,000/80,000 kgs)

= $8 + $4

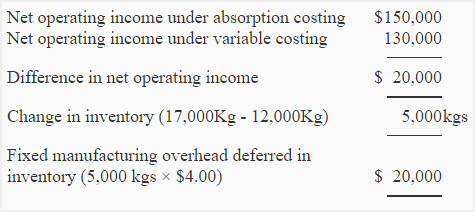
= $12

**(b) Variable costing income statement:**

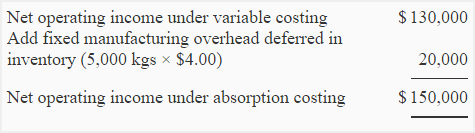
[](https://www.accountingformanagement.org/wp-content/uploads/2012/08/exercise-5-vaac-img2.png)

**(2) Explanation of the difference in net operating income:**

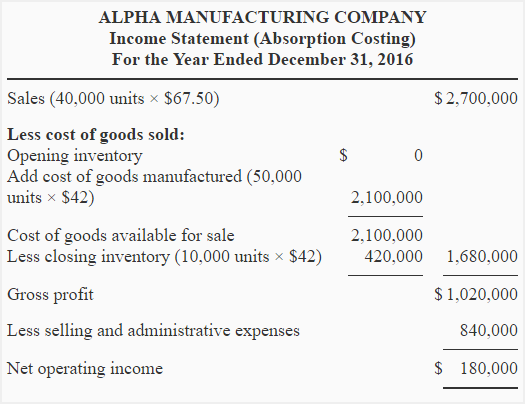
The net operating income under absorption costing is $20,000 more than the net operating income under variable costing. When production is more than sales (as in this exercise), the fixed manufacturing overhead is deferred in inventory that causes a higher net operating income under absorption costing than under variable costing. The reconciliation of net operating income is given below:

[](https://www.accountingformanagement.org/wp-content/uploads/2012/08/exercise-5-vaac-img3.png)

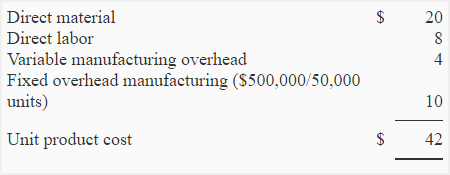
Or

[](https://www.accountingformanagement.org/wp-content/uploads/2012/08/exercise-5-vaac-img4.png)

The following is the absorption costing [income statement](https://www.accountingformanagement.org/income-statement/) of Alpha Manufacturing Company for the year ended December 31, 2016:

[](https://www.accountingformanagement.org/wp-content/uploads/2012/08/exercise-2-vaac-img1.png)

Fixed selling and administrative expenses are $600,000. Variable selling and administrative expenses are $6 per unit sold. The unit [product cost](https://www.accountingformanagement.org/product-cost-and-period-cost/) under absorption costing is computed as follows:

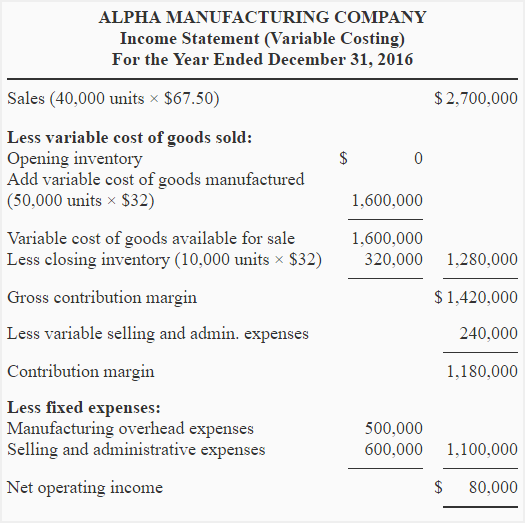
[](https://www.accountingformanagement.org/wp-content/uploads/2012/08/exercise-2-vaac-img2.png)

**Required:**

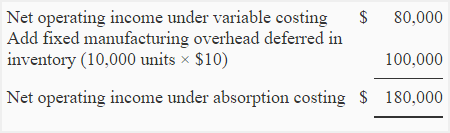
1. Prepare an income statement of Alpha Manufacturing Company using variable costing system.
2. Reconcile any difference in net operating income figure under variable costing system and under absorption costing system.

**Solution**

**(1). Variable costing income statement:**

[](https://www.accountingformanagement.org/wp-content/uploads/2012/08/exercise-2-vaac-img3.png)

**(2) Reconciliation of net operating income:**

[](https://www.accountingformanagement.org/wp-content/uploads/2012/08/exercise-2-vaac-img4.png)

Super Bike Manufacturing Company presents the following data for year 2022:

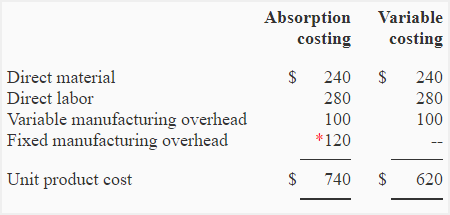
* Opening inventory: 0 Units
* Sales: 8,000 Units
* Production: 10,000 Units
* Closing inventory: 2,000 Units
* [Direct materials](https://www.accountingformanagement.org/direct-and-indirect-materials-cost/): $240
* [Direct labor](https://www.accountingformanagement.org/direct-and-indirect-labor-cost/): $280
* Variable manufacturing overhead expenses: $100
* Variable selling and administrative expenses: $40
* Fixed manufacturing overhead expenses: $1200,000
* Fixed selling and administrative expenses: $800,000

**Required:** Using the data given above, compute the unit [product cost](https://www.accountingformanagement.org/product-cost-and-period-cost/) of one bike under:

1. absorption costing system.
2. variable costing system.

**Solution:**

**Computation of unit product cost:**

[](https://www.accountingformanagement.org/wp-content/uploads/2016/12/exercise-1-vaac-img1.png)

\*1,200,000 / 10,000 = $120

The cost to manufacture one bike is $740 under absorption costing system and $620 under variable costing system.

Notice that the fixed manufacturing overhead cost has not been included while computing the cost of one bike under variable costing system.

**Note for students:** Selling and administrative expenses (both variable and fixed) are not relevant for the computation of unit product cost.