Crumpler is a Melbourne based product designers group that manufacture a range products including bags, backpacks, luggage, laptop bags, camera bags, casual bags, etc. The team has experienced in making unique pattern products for more than 40 years. The company is well known for producing items that contributed in solving everyday carrying problems through the design of functional products. The company emphasises on a creed that reads ‘*Built for* *Purpose & Made to Last*’. Crumpler has retail stores located in different places of Australiaand engages in selling products online to the wider customer base. The company's accountant, Mr. James Carlton, has just compiled sales forecast in relation to three products: Squid, Proud Stash and Private Zoo. Crumpler has experienced considerable volatility in sales volumes and variable costs of its products over the past years. Mr. Carlton believes that the forecast should be cautiously assessed from a cost-volume-profit perspective. The initial budget data for the year 2017 is as follows.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **Squid** | **Proud** | **Private** |  |
|  |  | **Stash** | **Zoo** |  |
|  |  |  |  |  |
| Unit sales | 4,500 | 4,500 | 6,000 |  |
|  |  |
|  |  |  |  |  |
| Unit sales price | $64 | $78 | $125 |  |
|  |  |
|  |  |  |  |  |
| Variable manufacturing costs per unit | $40 | $48 | $75 |  |
|  |  |
|  |  |  |  |  |
| Variable selling cost per unit | $12 | $16 | $22 |  |
|  |  |
|  |  |  |  |  |

For the coming year, Crumpler 's fixed manufacturing overhead is budgeted at $150,000, and the company's fixed selling and administrative costs are forecast to be $120,000. Crumpler has a tax rate of 30 per cent.

**Required: (treat each requirement independently, show all computations)**

1. 1. Determine Crumpler 's budgeted net profit for the year 2017. (**Hint**: use contribution margin approach to income statement
2. 2. Assuming the sales mix remains as planned, determine how many units of each product Crumpler must sell in order to breakeven in the year 2017.
3. 3. Calculate the following items for Crumpler:
	1. a. the projected safety margin in units for the year 2017.
	2. b. the projected safety margin in sales dollars for the year 2017.
4. 4. After preparing the original estimates, management determined that the variable manufacturing cost of Private Zoo would increase by 25 per cent, and the variable selling cost of Proud Stash could be expected to increase by $3.00 per unit. However, management have decided not to change the selling price of either product. In addition, management have learned that Private Zoo has been perceived as the best value on the market, and they can expect to sell three times as many Private Zoo as each of their other products. Under these circumstances, determine how many units of each product Crumpler would have to sell in order to break even in the year 2017.