True Flight Golf manufacturers a popular shaft for golf clubs. Its trade secret is a unique process for weaving high-tension wire into the center of the shaft such that energy is accumulated during the swing and released at impact. A specialized machine costing $3,000,000 is utilized in the manufacturing process. The machine has a 3-year life and no salvage value. True Flight uses straight-line depreciation. During the year, 25,000 shafts were produced, and the company was operating at full capacity. $700,000 of wire was used during the year.

(a) Is machinery depreciation fixed or variable? Is wire fixed or variable?

(b) For the two noted cost items, how much was total variable cost and total fixed cost?

(c) For the two noted cost items, how much was variable cost per unit and how much was fixed cost per unit?

(d) Repeat requirements (b) and (c), assuming production was only 20,000 units (and wire usage was reduced proportionately).

(e) For the following year, if the company acquired an additional machine to enable production of 40,000 total units, what would happen to the expected total and per unit variable and fixed cost?

(f) If the company experiences significant growth, and finds it necessary to continue to add additional machines, how would the machine cost be characterized (hint: fixed, variable, or something else)? In theory, at what production level(s) would per unit cost be minimized?