

Bread & Bloom Bakery — Assessment

Northline Print Co. · seven questions

Northline Print Co. runs three lines out of one building: Business Printing, Signs & Banners, and Custom Apparel. Shop rent is \$9,200 a month. All figures are monthly. Four decisions are on the counter, and the numbers on each one are not all worth the same.

1. Does this number get a vote?

8 ITEMS

A decision is on the table in each line below. Mark whether the figure is relevant to **that** decision.

THE DECISION	THE FIGURE	RELEVANT	NOT RELEVANT
Drop a class you have already paid for	The \$400 nonrefundable tuition already paid	☐	☒
Drive to a conference or fly	Gas and tolls for the drive, \$180	☒	☐
Drive to a conference or fly	The car's annual insurance premium, \$1,320	☐	☒
Work Saturday or go to a friend's wedding	The \$190 of Saturday wages given up by not working	☒	☐
A contractor takes a repaint job or turns it down	Paint bought for a cancelled job that fits this one, cannot be returned and has no other use, \$310	☐	☒
A shop adds a second delivery van or does not	The \$700 a month lease on the second van	☒	☐
A landscaper takes a rush job or turns it down	The overtime premium the rush job forces, \$460	☒	☐
A hospital closes its gift shop or keeps it	The shop's \$2,400 monthly share of hospital administration, which will still be spent after the shop closes	☐	☒

Two tests. *Differs between the alternatives* kills the insurance and the hospital's admin share, and saves the van lease and the overtime. *Lies in the future* kills the tuition and the paint. The Saturday wages catch the student who learned only "relevant costs are costs": nothing is spent, a benefit is given up, and it counts.

2. The event order

4 CELLS

Northline's Custom Apparel line prints 2,200 shirts a month and its presses can handle 3,000. A road race offers **\$9.00 each for 600 event shirts**. Northline's regular price is \$16.00, and its accountant puts the cost of a shirt at **\$12.50**: blank shirts \$4.20, ink and supplies \$1.10, hourly press operator \$1.70, and \$5.50 of shop overhead spread across every shirt the presses run. The order also needs a **one-time screen setup, \$240**. Enter every figure as a positive amount.

Revenue from the order	\$5,400
Costs that rise because these 600 shirts are printed (setup not included)	\$4,200
One-time costs the order causes	\$240
Increase in Northline's monthly income if it takes the order	\$960

\$5,400 – \$4,200 – \$240 = \$960. Take it. The trap is the \$12.50: \$5.50 of it is shop overhead paid in full at 2,200 shirts or 2,800, so the "\$3.50 a shirt loss" (\$2,100) is a paper number. Carrying it into row 2 posts \$7,500. Forgetting the setup posts \$1,200. With 800 shirts of spare capacity, the \$16.00 price earns no vote.

3. The same order, with the presses full

MULTIPLE CHOICE

Same order, one change: Northline's presses are already running all 3,000 shirts a month. Printing the 600 event shirts means printing 600 fewer regular shirts, which sell at \$16.00 and carry the same \$7.00 of costs that rise. What should Northline do?

- a) Take it. Income rises \$960, the same as before; the shirts still cover the costs they cause.
- b) ✓ Turn it down. Income would fall \$4,440.**
- c) Turn it down. Income would fall \$5,400.
- d) Turn it down. At \$9.00 the order is below the \$12.50 it costs to make a shirt.

(b). A regular shirt contributes $\$16.00 - \$7.00 = \$9.00$; 600 of them is \$5,400 given up. $\$960 - \$5,400 = -\$4,440$. (a) answers Q2 by procedure. (c) forgets the order's own \$960. (d) is the right verdict from the wrong number, the full-cost trap arriving correct by accident.

4. Panels: make them or buy them

3 CELLS

Northline's sign line uses **1,500 mounting panels a month** and cuts them itself. A supplier offers finished panels at **\$6.15 each**. Northline's accountant puts the cost of cutting one at **\$7.10**: board stock \$3.30, cutting-room labor \$1.85, power for the cutter \$0.25, depreciation on the cutter (bought three years ago, no resale value) \$0.60, and a \$1.10 share of shop rent and the plant manager's salary. The cutting-room crew works elsewhere in the shop if the cutter goes quiet, and the space stays Northline's either way. Enter every figure as a positive amount.

Monthly cost of making 1,500 panels, counting only what would stop being spent	\$8,100
Monthly cost of buying 1,500 panels	\$9,225
How much cheaper the better choice is, per month	\$1,125

Keep making, by \$1,125. Costs that stop: $\$3.30 + \$1.85 + \$0.25 = \5.40 . Make $1,500 \times \$5.40 = \$8,100$; buy $1,500 \times \$6.15 = \$9,225$. The \$7.10 hides two dead numbers: \$0.60 sunk depreciation and \$1.10 of allocated share. Keep both and the supplier looks like a \$1,425 saving. Keeping depreciation only posts \$9,000; the share only, \$9,750; both, \$10,650.

5. The line the report calls a loser

3 CELLS

Northline's monthly report shows **Signs & Banners losing \$3,600**: sales \$24,000, less \$16,200 of costs that rise and fall with sign volume, less \$6,900 of costs belonging to the line alone (its equipment lease and the sign designer's salary, all of which stop if the line closes), less a \$4,500 share of shop rent, the plant manager and the office, a share the shop keeps paying if the line closes. A frame shop next door will rent the floor space for **\$1,400 a month** if it comes free. Enter every figure as a positive amount.

What Signs & Banners actually brings in beyond the costs that would disappear with it	\$900
Monthly amount Northline would gain that it does not get today if the line closes	\$1,400
Increase in Northline's monthly income if it closes the line and rents the space out	\$500

Close it, by \$500. $\$24,000 - \$16,200 = \$7,800$; $-\$6,900 = \text{\$900 earned}$, not \$3,600 lost. Closing gives up \$900 and gains \$1,400 of rent, so +\$500. Two traps pointing opposite ways: the \$4,500 allocation makes a profitable line read as a loser, and the \$1,400 the space could earn is money forgone every month the line stays. Row 1 as $-\$3,600$ means the allocation was never unbundled; \$900 with a "keep" means it was unbundled and the student stopped there; \$2,300 means the rent was added instead of netted.

6. Replace the laminator?

8 ITEMS

Northline's six-year-old laminator still runs. A new one would cost **\$14,500** and last five years. For each figure, mark whether it is relevant to the replace-or-keep decision.

THE FIGURE	RELEVANT	NOT RELEVANT
The \$18,000 Northline paid for the old laminator six years ago	☐	☒
The \$14,500 price of the new laminator	☒	☐
The old laminator's remaining book value, \$3,000	☐	☒
Supplies and repairs to run the old laminator, \$640 a month	☒	☐
Depreciation still to be recorded on the old laminator, \$250 a month	☐	☒
The \$1,100 the dealer will pay today for the old laminator	☒	☐
Supplies and repairs to run the new laminator, \$410 a month	☒	☐
Northline's shop rent, \$9,200 a month	☐	☒

The trap is the \$250 of remaining depreciation. "Paid six years ago" and "book value" announce themselves as sunk; monthly depreciation does not, because it is a future monthly figure and future is half the definition. It is the same \$3,000 of already-spent money either way, expensed monthly if the machine stays or written off at once if it goes. The \$1,100 trade-in is the mirror: same asset, same past purchase, but money that arrives on one branch only. The rent is the control item for students who tag by size.

7. How much would it have to be?

MULTIPLE CHOICE

Closing Signs & Banners leaves Northline **\$500 a month better off**. But the sign line's walk-in customers often order business printing on the same visit, and nobody tracks how many. A business printing job averages **\$50**, with **\$25** of costs that rise with the work. How many of those jobs a month would have to disappear along with the sign line before closing it stops paying?

- a) About 10 jobs a month.
- b) ✓ **About 20 jobs a month.**
- c) About 36 jobs a month.
- d) You cannot put a number on it. It is a qualitative factor, so it has to be judged rather than calculated.

(b). Each lost job costs $\$50 - \$25 = \$25$, so $\$500 \div \$25 = 20$ jobs a month. (a) divides by the \$50 sale instead of the \$25 left after the work. (c) divides by the line's own \$900 contribution instead of the \$500 the decision turns on. (d) is the one to name on the board: a threshold does not require knowing the number, only knowing what it would have to be. Twenty jobs a month is about one a working day, which a room can judge even though nobody counted.