Advent of Code 2020

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Day 2: I Was Told There Would Be No Math

Click for Problem Statement

```
input = tibble(x = readLines("inputs/02-input.txt"))
```

Part 1

- surface area of package, plus extra (smallest side)
- sum all values

```
part1 = input %>%
  separate(x, into = c("l", "w", "h"), sep = "x", convert = TRUE) %>%
  mutate(l_w = l * w,
         w_h = w * h,
         h_l = h * l) %>%
  rowwise() %>%
  mutate(extra = min(l_w, w_h, h_l)) %>%
  mutate(area = (2*l_w) + (2*w_h) + (2*h_l) + extra)

head(part1)
```

```
## # A tibble: 6 x 8
## # Rowwise:
##       l     w     h   l_w   w_h   h_l extra  area
##   <int> <int> <int> <int> <int> <int> <int> <dbl>
## 1     4    23    21    92   483    84    84  1402
## 2    22    29    19   638   551   418   418  3632
## 3    11     4    11    44    44   121    44   462
## 4     8    10     5    80    50    40    40   380
## 5    24    18    16   432   288   384   288  2496
## 6    11    25    22   275   550   242   242  2376
```

```
sum(part1$area)
```

```
## [1] 1598415
```

Part 2

- shortest perimeter around package, plus bow (volume of package)
- sum all values

```
part2 = input %>%
  separate(x, into = c("l", "w", "h"), sep = "x", convert = TRUE) %>%
  mutate(l_wrap = 2*h + 2*w,
         w_wrap = 2*h + 2*l,
         h_wrap = 2*l + 2*w) %>%
  rowwise() %>%
  mutate(shortest_perimeter = min(l_wrap, w_wrap, h_wrap),
         bow = l * w * h) %>%
  mutate(ribbon_length = shortest_perimeter + bow)

head(part2)
```

```
## # A tibble: 6 x 9
## # Rowwise:
##       l     w     h l_wrap w_wrap h_wrap shortest_perimeter   bow ribbon_length
##   <int> <int> <int>  <dbl>  <dbl>  <dbl>              <dbl> <int>          <dbl>
## 1     4    23    21     88     50     54                 50  1932           1982
## 2    22    29    19     96     82    102                 82 12122          12204
## 3    11     4    11     30     44     30                 30   484            514
## 4     8    10     5     30     26     36                 26   400            426
## 5    24    18    16     68     80     84                 68  6912           6980
## 6    11    25    22     94     66     72                 66  6050           6116
```

```
sum(part2$ribbon_length)
```

```
## [1] 3812909
```