Name: _____ Date: _____

Lesson 6.5 Percent of Change

Solve. Show your work.

1. Anna makes 120 dolls each month to sell. This month, she increases the number of dolls she makes by 30%. How many dolls does Anna make this month?

2. Last year Shantell bought a car for $24,000. The current value of the car is $21,000. Find the percent decrease in the value of the car.

3. It costs Kerry $400 to build a tree house. He sells the tree house to Nannette and makes a 48% profit. How much does Nannette pay for the tree house?

4. Of the 280 granola bars that a bakery produces daily, 40% have nuts. How many more nut bars must the bakery produce so that the number of nut bars will increase by 25%?

Name: _____ Date: _____

5. Samantha had 75 necklaces to sell. By the end of the first week, there was only 57 necklaces left. By the end of the second week, there was only 38 necklaces left.

a) Find the percent decrease in the number of necklaces by the end of the first week.

b) Find the percent decrease in the number of necklaces from the end of the first week to the end of the second week.

6. The side length of a square is 30 cm. If the length of its sides is increased by 20%, find the percent increase in the area.

7. One day at a supermarket, 258 fruits were sold in the morning, and $\frac{5}{6}$ of the number of fruits sold in the morning were sold in the afternoon. The next day, the number of fruits sold in the afternoon increased by 20% compared to the number of fruits sold in the afternoon the previous day. Find the total number of fruits sold in the afternoon the next day.

Lesson 6.5

1. 100% → 120
1% → 120 ÷ 100 = 1.2
30% → 1.2 × 30 = 36
Total = 120 + 36 = 156
Anna makes 156 dolls this month.

2. Amount decrease →
$24,000 − $21,000 = $3,000
$24,000 → 100%
$1,000 → $\frac{100}{24}$%
$3,000 → $\frac{100}{24}$% × 3 = 12.5%
The value of the car decreased by 12.5%.

3. $400 × 148% = $592
Nannette pays $592 for the tree house.

4. 40% × 280 = 112
112 × 25% = 28
The bakery must make 28 more nut bars.

5. a) Decrease in the number of necklaces = 75 − 57 = 18
$\frac{18}{75}$ × 100% = 24%
The percent decrease in the number of necklaces by the end of the first week is 24%.

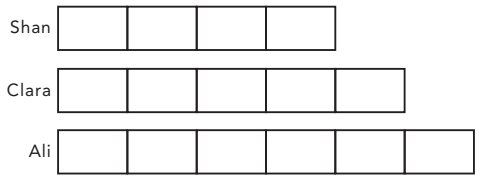
b) Decrease in the number of necklaces = 57 − 38 = 19
$\frac{19}{57}$ × 100% = $33\frac{1}{3}$%
The percent decrease in the number of necklaces from the end of the first week to the end of the second week is $33\frac{1}{3}$%.

6. New side length = 20% × 30 cm
= 6 cm
30 + 6 = 36 cm
Original area = 30 cm × 30 cm
= 900 cm^2
New area = 36 cm × 36 cm
= 1,296 cm^2
Increase in area = 1,296 − 900
= 396 cm^2
$\frac{396}{900}$ × 100% = 44%
The area increases by 44%.

7. Number of fruits sold in the afternoon one day = $\frac{5}{6}$ × 258
= 215
20% × 215 = 43
215 + 43 = 258
The total number of fruits sold in the afternoon the next day was 258.

Brain @ Work

1. a) 20% = $\frac{1}{5}$ $\frac{1}{4}$ = 25%

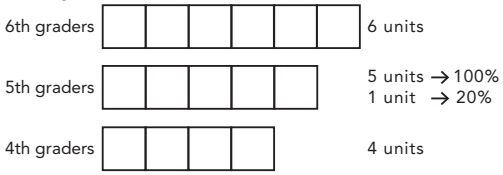


Total units = 4 + 5 + 6 = 15
2 units → $58
1 unit → $29
15 units → $29 × 15 = $435
They raised $435 altogether.

b) Amount that Clara raised
= $29 × 5 = $145
$\frac{145}{435}$ × 100% = $33\frac{1}{3}$%
Clara raised $33\frac{1}{3}$% of the money.

2. Fiction → $\frac{30}{100}$ × 20% = 6%
Non-fiction → $\frac{15}{100}$ × 80% = 12%
} 18%
100% − 18% = 82%
82% → 1,312
1% → 1,312 ÷ 82 = 16
12% → 16 × 12 = 192
192 books are borrowed.

3. Last year:



15 units → 360
1 unit → 360 ÷ 15 = 24
6th graders: 24 × 6 = 144
5th graders: 24 × 5 = 120
4th graders: 24 × 4 = 96
This year:
25% × 144 = 36 more 6th graders joined
50% × 96 = 48 more 4th graders joined
120 − (36 + 48) = 36 more 5th graders joined
$\frac{36}{120}$ × 100% = 30%
The number of 5th graders increased by 30%.

4. $55 − $45 = $10
40% of his savings = $10
100% of his savings = $\frac{10}{40}$ × 100
= $25
$55 + $25 = $80
His monthly allowance is $80.