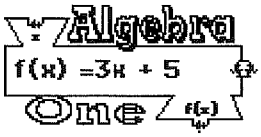
Percent Change = $\left(\frac{\text{New} - \text{Old}}{\text{Old}}\right) \cdot 100$ % Remaining = $\frac{\text{New}}{\text{Old}}$



Percent of Change Worksheet

Name_____

Period_____

Directions: State whether each percent of change is a percent increase or a percent decrease. Then find the percent of increase or decrease. Round to the nearest whole percent.

1. Original: $100 New: $59 — 41% ↓

$\left(\frac{59-100}{100}\right) \cdot 100 = -41$

$\frac{59}{100} = 0.59$

59% remaining is a 41% decrease.

2. Original: 324 people New: 549 people — 69% ↑

$\left(\frac{549-324}{324}\right) \cdot 100 = 69\%$

$\frac{549}{324} = 1.69$

169% remaining means a 69% increase.

3. Original: 58 Homes New: 152 Homes — 162% ↑

$\left(\frac{152-58}{58}\right) \cdot 100 = 162\%$

$\frac{152}{58} = 2.62$

262% remaining is a 162% increase

4. Original: 66 Dimes New: 30 Dimes — 55% ↓

$\left(\frac{30-66}{66}\right) \cdot 100 = -55\%$

$\frac{30}{66} = 0.45$

45% remaining means a 55% decrease.

5. Original: $53 New: $75 — 42% ↑

$\left(\frac{75-53}{53}\right) \cdot 100 = 42\%$

$\frac{75}{53} = 1.42$

142% remaining is a 42% increase.

6. Original: 15.6 liters New: 11.4 liters — 27% ↓

$\left(\frac{11.4-15.6}{15.6}\right) \cdot 100 = -27\%$

$\frac{11.4}{15.6} = 0.73$

73% remaining is a 27% decrease

7. Original: $3.78 New: $2.50 — 34% ↓

$\left(\frac{2.5-3.78}{3.78}\right) \cdot 100 = -34\%$

$\frac{2.50}{3.78} = 0.66$

66% remaining is a 34% decrease.

8. Original: 231.2 mph New: 236.4 mph — 2% ↑

$\left(\frac{236.4-231.2}{231.2}\right) \cdot 100 = 2\%$

$\frac{236.4}{231.2} = 1.02$

102% remaining is a 2% increase.

Directions: Find the final price of each item. When there is a discount and sales tax, first compute the discount price and then compute the sales tax and final price.

9. DVD: $219 sales tax: 6.5% — $233.24

$219(0.065) = 14.24$ Tax

$219 + 14.24 = 233.24$

Price + 6.5% tax

10. jeans: $39.99 discount: 15% sales tax: 4% — $35.35

$39.99(.15) = 6.00$ Discount

$39.99 - 6 = 33.99$ New Price

$33.99(.04) = 1.36$ Tax on New Price

$33.99 + 1.36 = 35.35$ Final Total

11. book: $19.95 discount: 5% sales tax: 5% — $19.90

$19.95 - 19.95(.05) = 18.95$ Discounted Price

$18.95 + 18.95(.05) = 19.90$

Discounted Price + 5% tax of discounted Price

12. tickets: $52.50 sales tax: 7% — $56.18

$52.50 + 52.50(0.07) = 56.18$

$56.18

Examining Percent Increase and Decrease

Name:

Solve each problem.

1) In February Roger spent 44 hours watching Netflix. In March he only spent 25.52 hours watching. What was the percent decrease in the amount of time he spent watching?

$\left(\frac{25.52-44}{44}\right)\cdot 100 = -42\%$ $\quad \frac{25.52}{44} = 0.58$ 58% of the initial amount, so 42% is missing

2) At a restaurant the bill came to $54.00. If you leave $61.56, what percent tip is that?

$\left(\frac{61.56-54}{54}\right)\cdot 100 = 14\%$ $\quad \frac{61.56}{54} = 1.14$ 114% of original bill which is 14% increase

3) A library normally collected $56.00 in fees a month. But in March they collected $84.00. What is the percent increase in the number of fees collected in March?

$\left(\frac{84-56}{56}\right)\cdot 100 = 50\%$ $\quad \frac{84}{56} = 1.5$ 150% of usual which is 50% more than normal

4) A pole was supposed to be 14 meters long, but it was accidentally made 21 meters long. The pole is _____ percent longer than it needs to be.

$\left(\frac{21-14}{14}\right)\cdot 100 = 50\%$ $\quad \frac{21}{14} = 1.5$ 150% of the correct length so it's 50% more.

5) The price for internet on a phone was $10.00 a month, but starting in November the price will be $13.20 a month. This is a _____% increase.

$\left(\frac{13.20-10}{10}\right)\cdot 100 = 32\%$ $\quad \frac{13.20}{10} = 1.32$ 132% of old price which is a 32% increase.

6) Last year a fishing license cost $59.00. This year the license will cost $44.84. This is a _____ percent decrease.

$\left(\frac{44.84-59}{59}\right)\cdot 100 = -24\%$ $\quad \frac{44.84}{59} = .76$ 76% of the old price which is a 24% decrease.

7) A store sold 13.00 dollars worth of gift cards in October. The next month the goal was to sell $17.16 worth of gift cards. This is an increase of _____ percent.

$\left(\frac{17.16-13}{13}\right)\cdot 100 = 32\%$ $\quad \frac{17.16}{13} = 1.32$ 132% of the original amount which is a 32% increase over the original 100%

8) Isabel's family decided to get rid of their cable TV. Originally they were paying $143.00 for the TV, internet and phone, but now they're paying $125.84. What was the percent the bill decreased by?

$\left(\frac{125.84-143}{143}\right)\cdot 100 = -12\%$ $\quad \frac{125.84}{143} = .88$ 88% of the original which is a 12% decrease.

9) A store normally averaged 102 customers a day. But on the weekends they averaged 75.48 customers a day. What is the percent decrease in the number of customers?

$\left(\frac{75.48-102}{102}\right)\cdot 100 = -26\%$ $\quad \frac{75.48}{102} = .74$ 74% of the normal which is a 26% decrease.

10) Normally a game costs $33.00. But the new special edition version is going to be $39.60. This is an increase of _____ percent.

$\left(\frac{39.60-33}{33}\right)\cdot 100 = 20\%$ $\quad \frac{39.60}{33} = 1.2$ 120% of the normal price which is a 20% increase.

Answers

1. 42%
2. 14%
3. 50%
4. 50%
5. 32%
6. 24%
7. 32%
8. 12%
9. 26%
10. 20%

1-10	90	80	70	60	50	40	30	20	10	0