

Algebra 1 CC
Assignment #58
Percent Increase and Decrease
*** Optional**

1. Perform each of the following calculations using a single multiplication. Show the product that you use to find your final answer. Do not round your final answers.

*(a) Increase 350 by 5%

(b) Increase 120 by 10%

(c) Increase \$1,300 by $6\frac{1}{2}\%$

2. Perform each of the following calculations using a single multiplication. Show the product that you use to find your final answer. Do not round your final answers.

*(a) Decrease 160 by 10%

(b) Decrease 450 by 6%

(c) Decrease \$4.50 by 8%

3. A population of bacteria is growing at a rate of 20% per hour. If the population starts at 320, what is it an hour later?

(1) 360

(2) 356

(3) 372

(4) 384

*4. The price of oil, in dollars per barrel, declined last week by 3.5%. If it started the week at \$102.00 per barrel, at what per barrel price did it end the week?

(1) \$98.43

(2) \$98.50

(3) \$99.12

(4) \$100.56

5. An environmental firm is removing pollution from a river bed. They find that the pollution is decreasing at a rate of 5% per month, as measured by parts per million. The pollution starts off at a level of 360 parts per million (ppm).

(a) What is the pollution level one month after they begin clean-up? Use appropriate units.

(b) What is the level two months after? Use appropriate units.

R1-R3: Use your calculator to simplify each expression and round your answer to the nearest hundredth:

R1. 29.73×14.6

R2. 12.23^2

R3. $\pi \times 12$

R4. Simplify: $(-6)^2 + 3(-4) - (5 + 2)$

*R5. There are 36 students in the gym class. The teacher wants to make 9 groups of equal size. How many students are in each group?

*R6. John can run 6 miles in 48 minutes. What is his rate in miles per hour?

R7. Sara needs 14 beads to make a bracelet. She invites 6 friends to her house to make bracelets. If she wants to have enough beads for each of her friends and herself to make 3 bracelets, how many beads should she have?

**R8. Evaluate the following expression when $m = -2$: $3m - 2m^2$

1. (a) 367.5
(b) 132
(c) 1384.5

2. (a) 144
(b) 423
(c) 4.14

3. (4)

4. (1)

5. (a) 342 ppm
(b) 324.9 ppm

R1. 434.06

R2. 149.57

R3. 37.70

R4. 17

R5. 4

R6. 7.5

R7. 294

R8. -14