Technical Math for Allied Health
Class notes
Percent Increase and Decrease, Military Time, and Geometry (module 2)

Percent Increase and Decrease: We might have a quantity that changed over time and we are interested in how much it changed, in relation to the original quantity. That is often described in percent change: percent increase (if the quantity went up) or percent decrease (if the quantity went down). In general, we have the formula below.

$$Percent\ change = \frac{change}{old\ value} = \frac{new\ value - old\ value}{old\ value} \times 100$$

percent increase:
change is positive, or
percent decrease:
change is negative

expl 1: Solve. Round to the nearest whole percent.

The cost of attending a private college rose from $19,000 in 2000 to $22,200 in 2006. Find the percent increase.

expl 2: Mike's health insurance premium for last year was $1,512. If he paid $1,440 this year, what is the percent of decrease on his health insurance premium? Round to the nearest hundredth of a percent.

expl 3: The numbers of students who passed the exit exam this semester increased 40% from last semester. If 28 people passed the exit exam last semester, how many passed the exit exam this semester?

Military Time (24 Hour Notation): The healthcare fields use military times with medical recordings. Look at the table below for equivalencies between military time and the 12-hour clock.

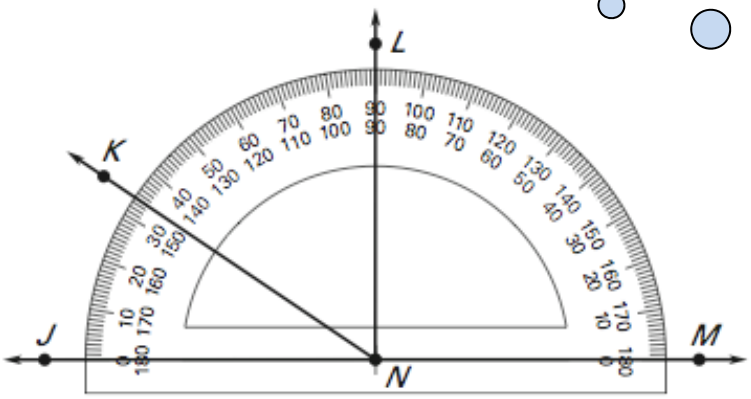
12-Hour Clock	Military Time	12-Hour Clock	Military Time
12:00 AM	0000 hours	12:00 pm (noon)	1200 hours
1:00 AM	0100 hours	1:00 PM	1300 hours
2:00 AM	0200 hours	2:00 PM	1400 hours
3:00 AM	0300 hours	3:00 PM	1500 hours
4:00 AM	0400 hours	4:00 PM	1600 hours
5:00 AM	0500 hours	5:00 PM	1700 hours
6:00 AM	0600 hours	6:00 PM	1800 hours
7:00 AM	0700 hours	7:00 PM	1900 hours
8:00 AM	0800 hours	8:00 PM	2000 hours
9:00 AM	0900 hours	9:00 PM	2100 hours
10:00 AM	1000 hours	10:00 PM	2200 hours
11:00 AM	1100 hours	11:00 PM	2300 hours

expl 4: Fill in the following table with the missing clock times as needed.

	12-hour Clock Time	Military Time
a)	7:15 pm	
b)	6:00 am	
c)		0336 hours
d)		1654 hours

Geometry Review

In Exercises 10–12, use the diagram to find the measure of the indicated angle. Then classify the angle.



Do you know what an acute angle is? Right? Obtuse? Straight?

10. $\angle JNK$ **11.** $\angle KNM$ **12.** $\angle LNM$

Name an… Acute angle:

Right angle:

Obtuse angle:

Straight angle:

Complementary: sum to 90 degrees
Supplementary: sum to 180 degrees

In Exercises 13–15, $\angle 1$ and $\angle 2$ are complementary angles. Given the measure of $\angle 1$, find $m\angle 2$.

13. $m\angle 1 = 87°$ **14.** $m\angle 1 = 15°$ **15.** $m\angle 1 = 71°$

In Exercises 16–18, $\angle 1$ and $\angle 2$ are supplementary angles. Given the measure of $\angle 1$, find $m\angle 2$.

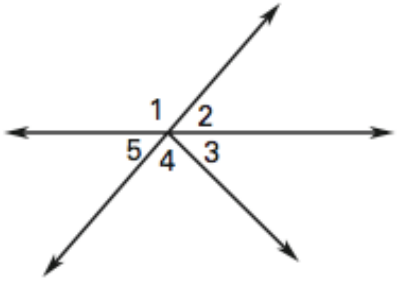
16. $m\angle 1 = 8°$ **17.** $m\angle 1 = 87°$ **18.** $m\angle 1 = 115°$

In Exercises 19–21, use the diagram. Tell whether the angles are *vertical angles*, a *linear pair*, or *neither*.

19. $\angle 1$ and $\angle 2$

20. $\angle 2$ and $\angle 5$

21. $\angle 1$ and $\angle 4$



Vertical angles are angles that are opposite one another when two (straight) lines cross.

A **linear pair** of angles is two angles that are adjacent (side-by-side) and supplementary.