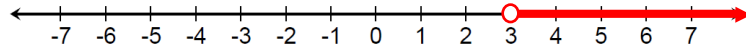**Please complete the following problems neatly on your own paper. Show all your work and circle your answers. Transfer your answers for each question to the answer sheet provided. You will turn in both the answer sheet and your work.**

1.   **4.A**   Solve the equation for *x*.

$$\text{Solve: } 3(2x - 7) = 4(2 + 3x)$$

$x =$ _____ $\dfrac{-29}{6}$ _____

2.   **4.A**   Solve*:* $3(x + 4) < 9 + 4x$ and show your solution on the number line

3.   **4.A**

One day in New York City the temperature was 15°Celsius (C). Using the formula $F = \dfrac{9}{5}C + 32$, Peter converts the temperature to degrees Fahrenheit (F).   What was the temperature in Fahrenheit?
59° F

4.   **4.B**   Write the equation of a line that passes through the point (4, -2) and (6, -3).
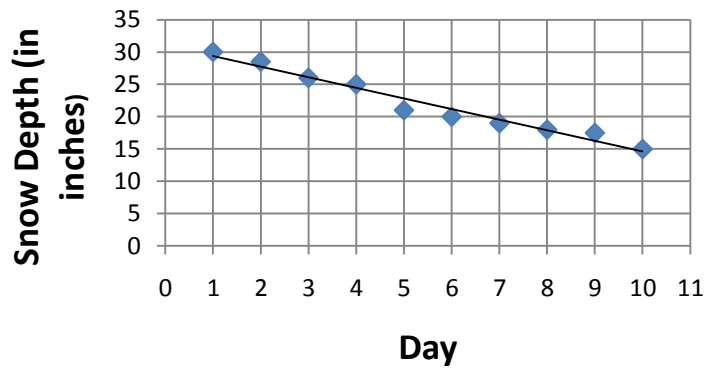
● A. $y = -\dfrac{1}{2}x$

○ B. $y = -\dfrac{1}{2}x - 4$

○ C. $y = 2x - 10$

○ D. $y = \dfrac{1}{2}x - 4$

5.   **4.B**   Write this linear equation in slope-intercept form.

$$4x - 8y = -24$$

Slope-intercept form _____y = ½x + 3_____

6. **4.C** Mr. Jackson measures the snow in his front yard every day and graphs the depth of the snow. His graph is shown below.

What does the slope of the line that most closely fits his data mean in the context of this problem?

The slope represents how much the depth of now declined each day. OR The snow loses depth at the rate of 5 inches every 3 days.

7. **4.D** Consider the system of equations: $2x + 4y = 8$
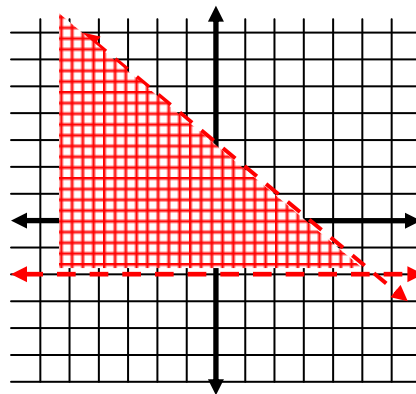$6y = -3x + 12$

Which statement correctly describes the graphs of these equations?

- O   A. The lines are parallel.
- ●   B. The lines coincide.
- O   C. The lines intersect at (5,-½).
- O   D. The lines intersect at (-2,3)

8. **4.D** Solve the following system of inequalities: Show your solutions on the graph below.
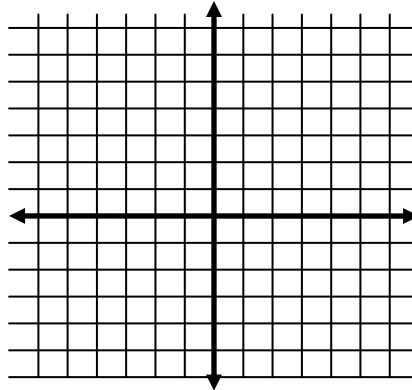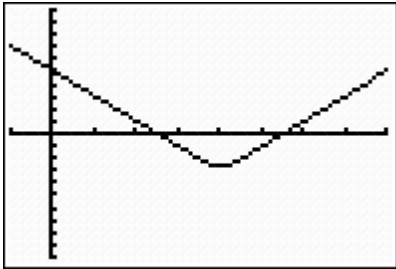$y > -2$
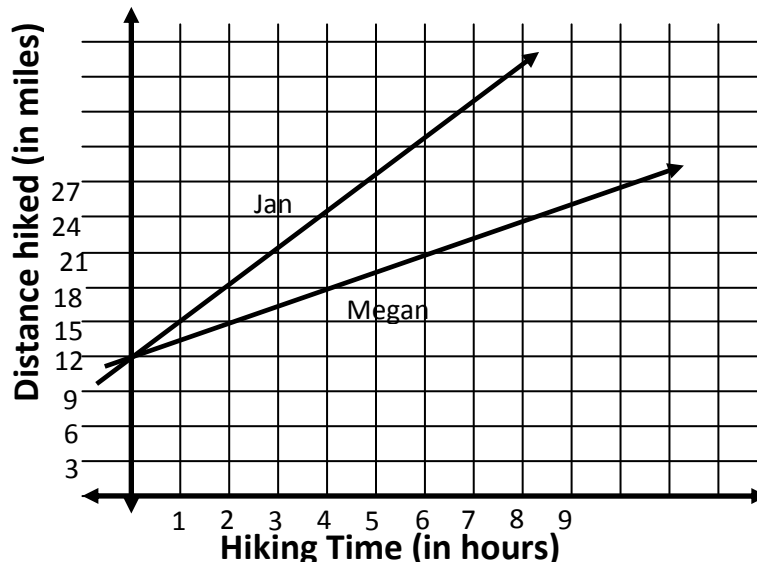$x + y < 3$

9. **4.E** Graph the function $f(x) = 2|x-4| -3$ on the grid below.

ANS

10 **4.E** Jan and Megan were taking part in a hike for charity. The hike took place over three days. The graphs of their hikes are shown below.

Compare the slopes of the graphs of the two hikers. Explain the meaning of the slopes in the context of this situation.

Jan is hiking faster than Megan.

Compare the y-intercepts of the graphs of the hikers. Explain the meaning of the y-intercepts in the context of this situation.

They were both at the same spot (12 miles into the hike) at the same time.

11. **6.B** Mr. Hackman gave an Algebra test to two classes. Their results are summarized with the box and whisker plots below.
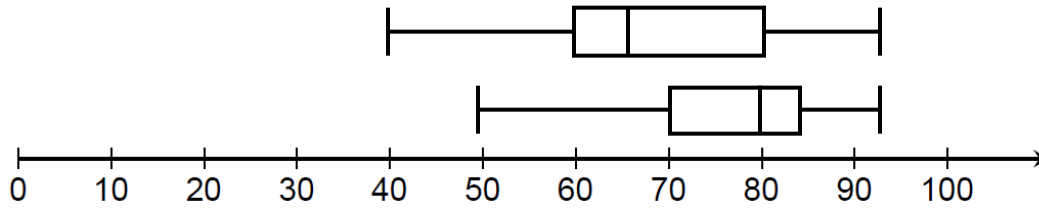
Write two statements comparing the scores of the two classes.
Examples:
50% of the class scored above 80% in the second class while only 25% did in the first class. OR the first class has a bigger range of scores than the second class.

12. **6.A** Barry recorded his golf scores for 10 rounds of golf. His scores are shown below.

78, 79, 82, 80, 63, 78, 78, 80, 80, 77

If Barry is playing in a tournament with players of similar ability, would he use the mean or the median of his scores to choose other players? Justify your answer.

The median is is slightly higher than the mean and is more indicative of his typical score, however there is not enough difference to make a significant difference. One low score affects the mean more than the median.

13. **6.C** Suppose in problem 12, that his golf handicap took 6 strokes off of every score. How would that change the mean, median and mode of his scores?

- ○ A. The mean is decreased by 6 strokes.
- ○ B. The median is decreased by 6 strokes.
- ○ C. The mode is decreased by 6 strokes.
- ● D. All three are decreased by 6 strokes.

14. 6.D

Puget Sound Butter Clams
(n = 88)
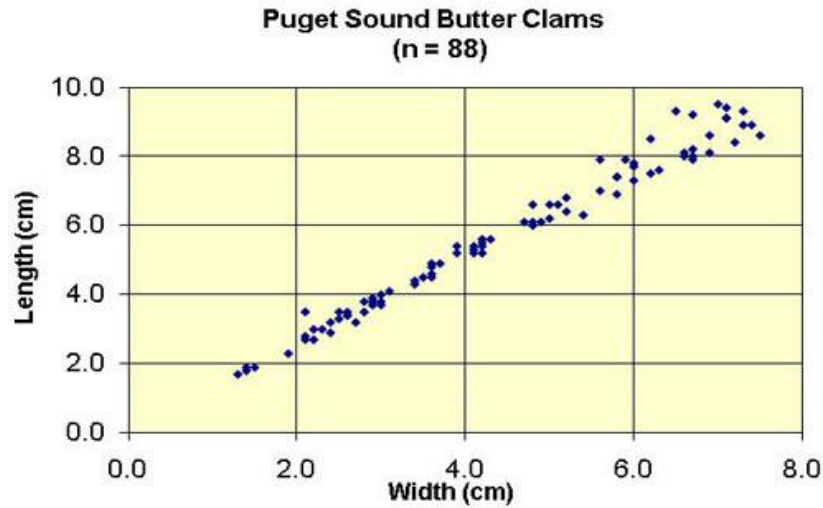
In the table above are the lengths and widths of a certain kind of clam in the Puget Sound.

- Write the equation of a linear function that will model this data. (appx) y = 4/3 x

- What does the slope of the function mean in this context? the length increases 4 cm for every 3 cm of width
- What does the y-intercept of the function mean in this context? If there is no width then there is no length of the clams.

15. 6.E

Weight of Tangerines

Number of Tangerines in Bag
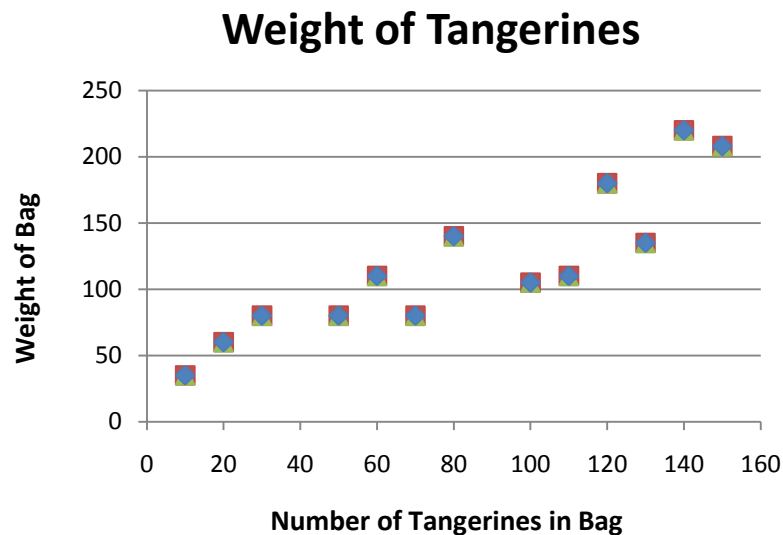
Several bags of tangerines were weighed. The comparison of the number of tangerines in the bag and the weight of the bag. Which of the following statements about the data is true?

- ● A. A weak positive correlation
- ○ B. A weak negative correlation
- ○ C. A strong positive correlation
- ○ D. A strong negative correlation

16. **8.A B,C** Ten consecutive even integers have a sum of 1210. Calculate the smallest of these integers.

112