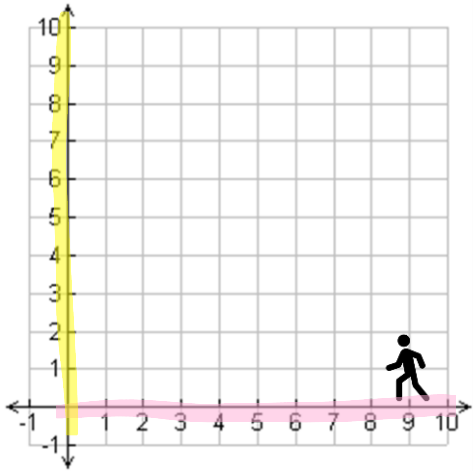
Materials: pencil, pink and yellow colored pencils

Lesson 12
Points on a Coordinate Graph, Part 1
Finding the Median, Part 1

Points on a Coordinate Graph



x-axis: the horizontal number line

y-axis: the vertical number line

origin: the spot where the two number lines intersect

ordered pair: two numbers, written in a specific order inside parenthesis, that identify a precise location of a point.

Strategic use of color helps students differentiate items that are easily confused.

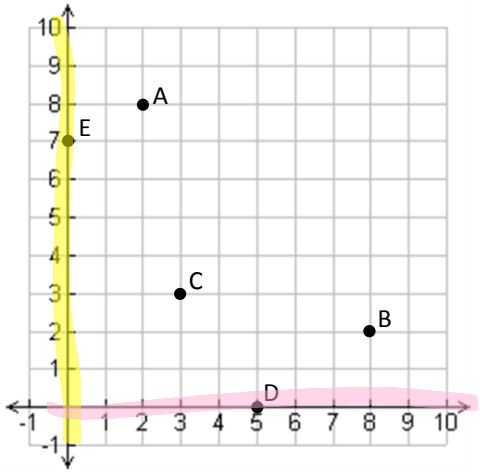
You have to walk into an elevator before you can go up.

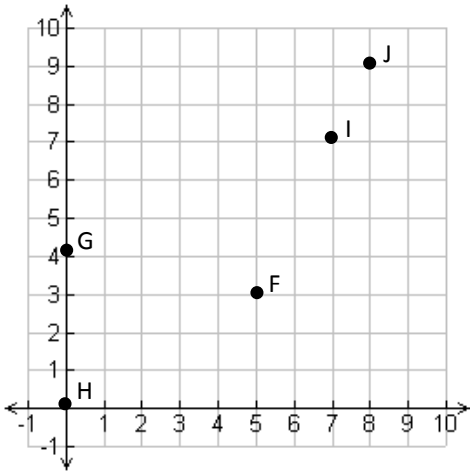
same numbers

Point A (2, 8)
Point B (8, 2)

different locations!

Point C (3, 3)
Point D (5, 0)
Point E (0, 7)





Point F (5,3)
Point G (0,4)
Point H (0,0)
Point I (7,7)
Point J (8,9)

The numbers and letters at the bottom of the lesson notes tell which standard is being taught.

Finding the Median, Part 1

The average, or mean, is a measure of center. Another measure of center is something called the *median*. A median on a street is in the middle of the street. The median in math is the center of a set of numbers.

Example 1: What is the median of the following set of numbers? {8, 10, 14, 12, 16}

Cross-Out Method

8, 10, 12, 14, 16

Step 1: Put the numbers in order!

Step 2: Cross out the first and last numbers repeatedly until only one is left.

Example 2: What is the median of the following set of numbers? {10, 17, 11, 13, 14, 17, 19}

Counting Method

10, 11, 13, 14, 17, 17, 19
1 2 3 4 5 6 7

Step 1: Put the numbers in order!

Step 2: Count the numbers. Divide by 2 and round up. Count the list to that number.

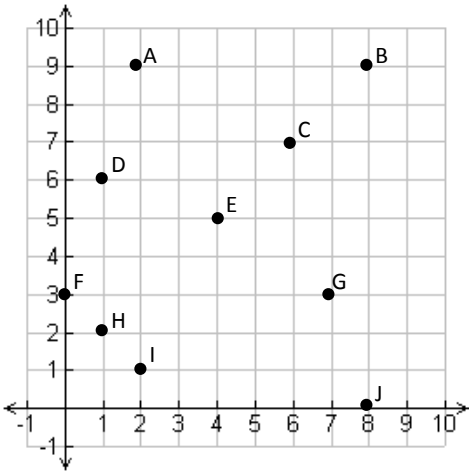
7 $7 \div 2 = 3.5$ 4

Using different colors also differentiates the steps, which is useful when students must return to their notes at a later date.

Practice Set

a) Brutus said that the ordered pair for the origin is 0,0. He's not quite right. What's he missing?

Refer to the graph to answer problems b and c.

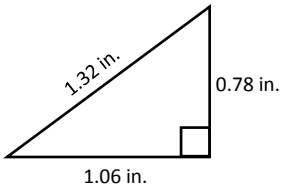


b) What is the ordered pair for Point F?

c) What is the location of Point J?

d) What is the median of the following set of numbers?

{35, 18, 76, 21, 35}



Problem Set

(10) 1. What is the area of the triangle above?

(9) 2. Fill in the blank with the correct word. *factor* × *factor* = _____

(9, 12) 3. Given the set {16, 6, 6, 9, 8, 11, 14}, what is the mean of the set? What is the median?

4. List all 6 factors of 18 without looking at your list.

(9) 5. What is the greatest common factor of 18 and 16?

(9) 6. **See the number line on your answer sheet and identify which number is represented by the arrow.**

(7) 7) What is another way to express m^5?

(8) 8) What is 1.25% as a decimal number?

(11) 9) Evaluate the expression when $m = 11$ and $n = 8$. $55 \div m + 7n \times 2 - 6 \times 3$

(11) 10) Solve the equation $37y = 11{,}396$

(4) 11) Solve: $y + 0.52 = 52$

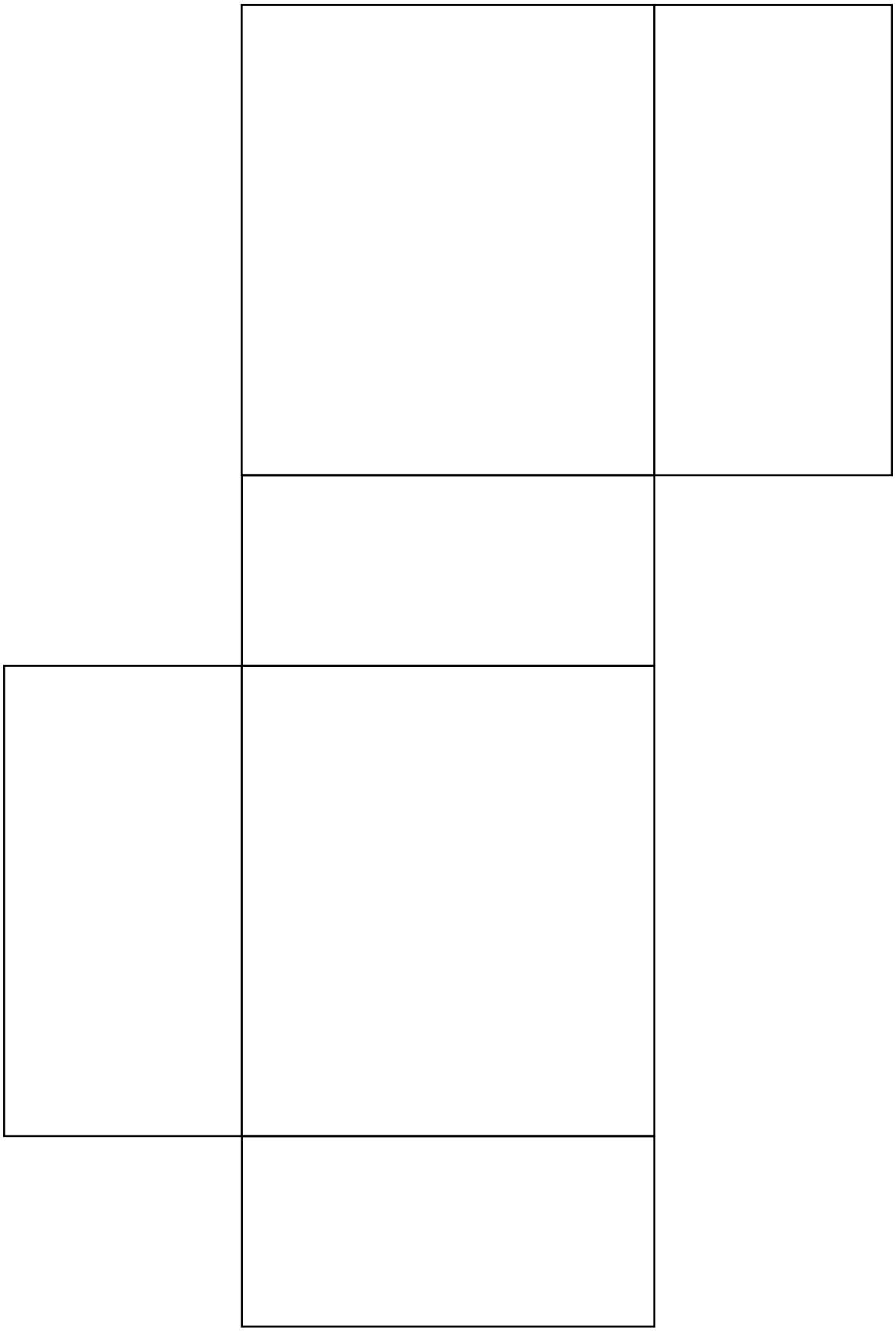
(8) 12) $15.879 \div 7.9$

(10) 13) $\frac{7}{9} \times \frac{3}{14}$

(10) 14) $\frac{1}{8} \times 56$

(12) **15) See answer sheet for problem 13.** Above each ordered pair, write the letter of point at that location.

16) Cut out the shape on the next page (cut only around the outside!) and fold it along the inside lines to make a box. Have an adult initial your answer sheet to confirm you did this. Save the shape for a later lesson.



Practice Set

a) _____

b) _____

c) _____

d) _____

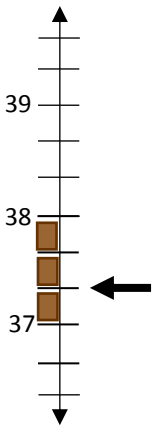
Having all the answers lined up makes correcting quick and easy.

There's lots of space for solving problems.

Problem Set

1. _____
2. _____
3. mean:_____ median: _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. $37y = 11{,}396$

Problem 6



Students are taught to think of Kit Kat bars to figure out fractions on a number line. "It's the bars, not the breaks, that are important!"

Problem 9

$55 \div m + 7n \times 2 - 6 \times 3$

Certain problems are printed on the answer sheet so your student doesn't have to copy the problem. Saves time *and* prevents copying errors!

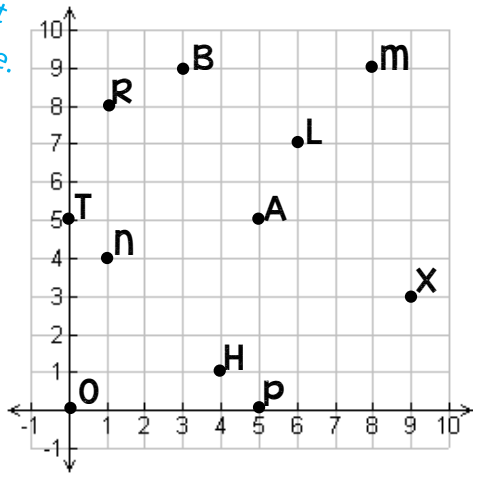
11. $y + 0.52 = 52$

Showing your work on equations is so important that there is room right here on the answer sheet for it.

12. _____
13. _____
14. _____
15. m _____ _____ _____ _____ _____ _____
(8, 9) (5, 5) (0, 5) (4, 1) (3, 9) (0, 0) (9, 3)

The letters spell out Mrs. Fish's license plate.

16. _____



Practice Set

e) parenthesis

f) (0, 3)

g) (8, 0)

h) 35 ~~18~~, ~~21~~, 35, ~~35~~, ~~76~~

① 1.06 × .78 → 848 + 7420 = .8268

The Answer Key shows the work (where appropriate) so you can quickly and easily discover where your student made a mistake if he or she gets a problem incorrect.

Problem Set

17. 0.8268 sq. in.

18. product

19. mean: 10 median: 9

20. 1, 2, 3, 6, 9, 18

21. 2

22. $37\frac{1}{3}$

23. $m \cdot m \cdot m \cdot m \cdot m$

24. 0.0125

25. 99

26. $\frac{37y}{37} = \frac{11{,}396}{37}$

$y = 308$

27. $y + 0.52 = 52.00$

$-.52 \quad -.52$

$y = 51.48$

28. 2.01

29. $\frac{1}{6}$

30. 7

Mental math is TERRIFIC! #14 can be done mentally.

31.

M	A	T	H	B	O	X
(8, 9)	(5, 5)	(0, 5)	(4, 1)	(3, 9)	(0, 0)	(9, 3)

32. If

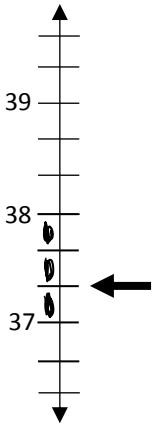
③ 6, 6, 8 → 20; 9, 11 → 20; 14 + 16 → 30; 70 ÷ 7 = 10

⑫ 2.01 R 1; 79 | 158.79; 158; 07; 0; 79; 79 × 2 = 158

⑩ 308 R 0; 37 | 11,396; 111; 29; 0; 296; 37 × 3 = 111; 37 × 8 = 296

⑬ $\frac{1}{9} \times \frac{3}{14} = \frac{1}{6}$

Problem 6



Problem 9

$55 \div m + 7n \times 2 - 6 \times 3$

$55 \div 11 + 7(8) \times 2 - 6 \times 3$

$5 + 56 \times 2 - 18$

$5 + 112 - 18$

$117 - 18$

99