

April 27th

NAME _____

PA.D.1.1 and 1.2

- ① There are 5 students in the group. The median score made by the group on the last test was 85. The scores for 4 students are shown. What would have been the score for the 5th student?

85	80	95	80
----	----	----	----

33, 26, 29, 30

- ② If the number 30 is added how is the mean affected?

- ③ Your first 6 test grades mean score was an 80%. Your next quiz grade was 100%. What is your mean score of the 7 quizzes?

Day	Number
Monday	75
Tuesday	80
Wednesday	82
Thursday	78
Friday	?

- ④ What is the next number to have a mean of 80?

12, 15, 18, 14, 45, 15, 16, 13

- ⑤ Given the following data which measure of central tendency would it be best to use to describe the data?

- a. Mode
- b. Range
- c. Mean

d. Median

April 27th

NAME Key

PA.D.1.1 and 1.2

① There are 5 students in the group. The median score made by the group on the last test was 85. The scores for 4 students are shown. What would have been the score for the 5th student?

85	80	95	80
----	----	----	----

80, 80, 85, 95

median = put them in order

85 or greater

2 on this side

other value must be 85 or greater

$33+26+29+30 = 118 \div 4 = 29.5$

② If the number 30 is added how is the mean affected?

It will increase

When adding a value to the data set:

- if the value is equal to the mean - the mean stays the same
- if the value is greater than the mean - the mean increases
- if the value is less than the mean - the mean decreases

③ Your first 6 test grades mean score was an 80%. Your next quiz grade was 100%. What is your mean score of the 7 quizzes?

$80 \times 6 = 480$

$$\begin{array}{r} + 100 \\ \hline 580 / 7 \end{array}$$

83%

Day	Number
Monday	75
Tuesday	80
Wednesday	82
Thursday	78
Friday	?

= 315

④ What is the next number to have a mean of 80?

$$\begin{array}{r} 400 \\ - 315 \\ \hline \end{array}$$

85

$$\begin{array}{r} \times 5 \\ \hline 400 \end{array}$$

12, 15, 18, 14, 45, 15, 16, 13

⑤ Given the following data which measure of central tendency would it be best to use to describe the data?

- a. Mode
- b. Range
- c. Mean
- d. Median

The median because 45 is an outlier.

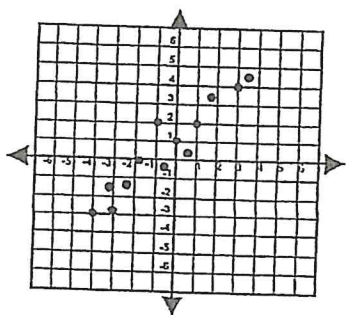
April 28th

NAME _____

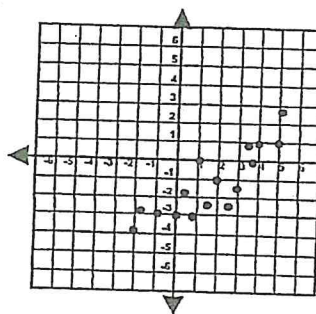
PA.D.1.3

Choose the line of best fit for the following scatter plots.

- a. $y = -x + 1$
- b. $y = x - 1$
- c. $y = -x - 1$
- d. $y = x + 1$

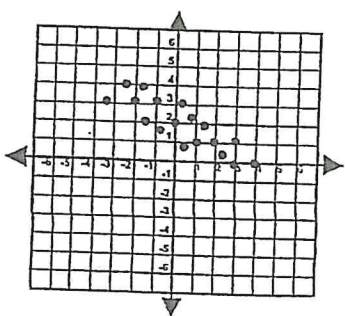


4.

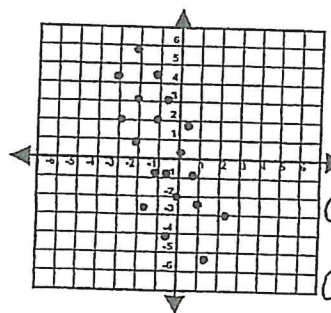


- a. $y = -x + 3$
- b. $y = x - 3$
- c. $y = -x - 3$
- d. $y = x + 3$

- a. $y = 2x + 1$
- b. $y = -2x + 1$
- c. $y = \frac{1}{2}x + 2$
- d. $y = \frac{1}{2}x + 2$



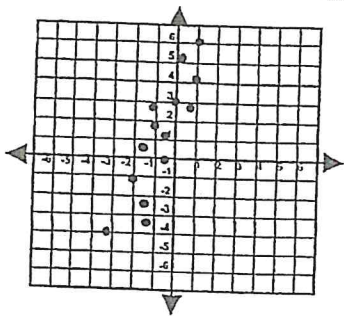
5.



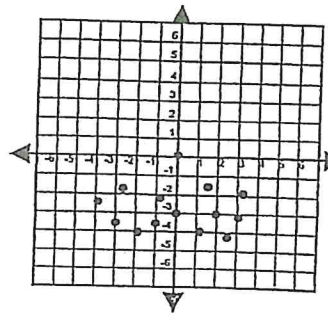
- a. $y = \frac{1}{4}x - 2$
- b. $y = -2x + 1$
- c. $y = -4x - 2$
- d. $y = -\frac{1}{4}x - 2$

3.

- a. $y = 3x + 3$
- b. $y = -3x + 3$
- c. $y = 3x - 3$
- d. $y = -3x - 3$



6.



- a. $y = 3$
- b. $x = 3$
- c. $y = -3$
- d. $x = -3$

Line of best fit is a straight line the data on a scatterplot.

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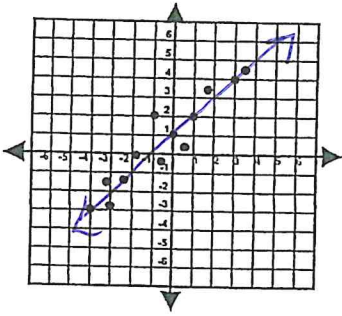
NAME

Key

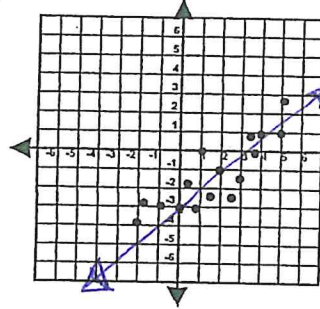
PA.D.1.3

Choose the line of best fit for the following scatter plots. Find the slope and y-intercept to write the equation.

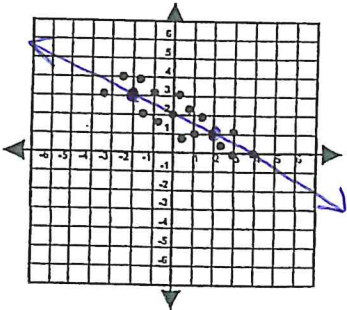
1.
 a. $y = -x + 1$
 b. $y = x - 1$
 c. $y = -x - 1$
 d. $y = x + 1$



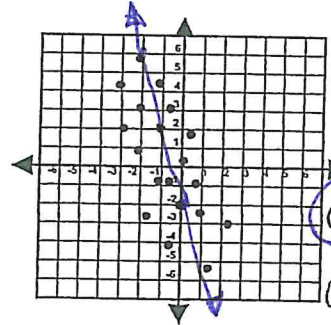
4.
 a. $y = -x + 3$
 b. $y = x - 3$
 c. $y = -x - 3$
 d. $y = x + 3$



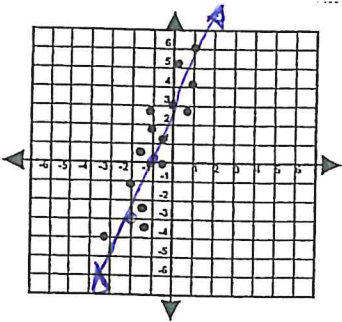
2.
 a. $y = 2x + 1$
 b. $y = -2x + 1$
 c. $y = -\frac{1}{2}x + 2$
 d. $y = \frac{1}{2}x + 2$



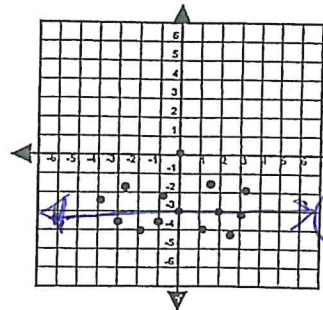
5.
 a. $y = \frac{1}{4}x - 2$
 b. $y = -2x + 1$
 c. $y = -4x - 2$
 d. $y = -\frac{1}{4}x - 2$



3.
 a. $y = 3x + 3$
 b. $y = -3x + 3$
 c. $y = 3x - 3$
 d. $y = -3x - 3$



6.
 a. $y = 3$
 b. $x = 3$
 c. $y = -3$
 d. $x = -3$



April 29th

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PA.D.2.1, 2.2 and 2.3

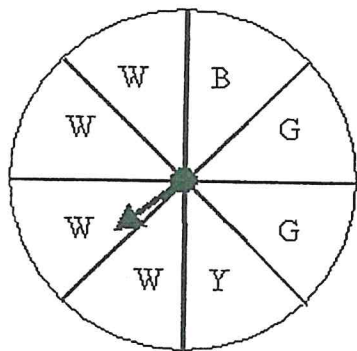
- ① A bag contains red, green, and blue marbles. A marble is drawn randomly from the bag, its color is recorded, and then it is put back in the bag. This is repeated a total of 30 times. The results are shown in the table.

Marble Color	Frequency
Red	3
Green	6
Blue	21

What is the experimental probability of drawing a red marble?

- [A] $\frac{1}{10}$ [B] $\frac{1}{9}$ [C] $\frac{1}{5}$ [D] $\frac{7}{10}$

- ② The spinner below is spun 120 times. How many times will the spinner likely land on the letter B?



- ③ A bag contains 25 marbles. There are 7 blue, 6 green, 6 red, 3 yellow, and 3 black marbles. Without looking, Gail reaches into the bag and draws one marble. What is the probability she draws a red marble?

- [A] $\frac{19}{25}$ [B] $\frac{1}{6}$ [C] $\frac{6}{25}$ [D] $\frac{6}{19}$

- ④ A single die is tossed. Find the probability of getting a 2.

- [A] $\frac{1}{6}$ [B] 1 [C] $\frac{1}{2}$ [D] $\frac{5}{6}$

5 A coin is tossed and a die is rolled. What is the probability that the coin shows tails and the die shows an even number?

- A. $\frac{1}{6}$
- B. $\frac{1}{8}$
- C. $\frac{1}{9}$
- D. $\frac{1}{4}$

6 A mayor wanted to see if the people in his town thought he was doing a good job.

Which choice best represents a sample?

- A. 1,000 unemployed voters.
- B. The mayor's family.
- C. The residents of the town.
- D. 242 voters.

7 A beverage company wanted to see if people in the United States liked their new logo.

Which choice best represents a population?

- A. A selection of logo artists.
- B. Every person in the United States.
- C. A selection of shoppers from different states.
- D. 3,800 children age 5 - 15

8 A bag contains 3 pennies, 3 nickels, and 5 dimes. A coin is drawn at random and placed in a bowl. Then a second coin is drawn and placed in the bowl. What is the probability that the first coin is a penny and the second coin is a dime?

- [A] $\frac{3}{22}$ [B] $\frac{3}{11}$ [C] $\frac{8}{11}$ [D] $\frac{15}{121}$

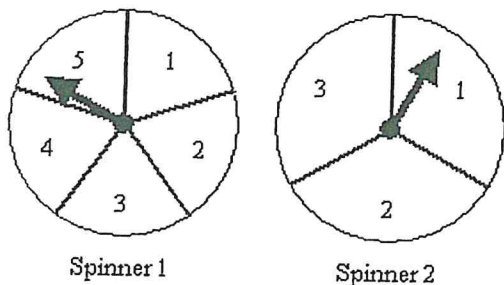
9 Cards spelling out DEPENDENT are shuffled and placed face-down on a table.

D	E	P	E	N	D	E	N	T
---	---	---	---	---	---	---	---	---

A card is drawn, and without replacing it, a second card is drawn. What is the probability that the first card has a P written on it and the second card has a T written on it?

- [A] $\frac{1}{72}$ [B] $\frac{1}{36}$ [C] $\frac{2}{17}$ [D] $\frac{1}{3}$

- 10 Each game wheel is divided into equal sections. The spinners on the game wheels are each spun once and the number each spinner lands on is recorded.



What is the probability that both numbers are even numbers?

- [A] $\frac{2}{15}$ [B] $\frac{11}{15}$ [C] $\frac{3}{15}$ [D] $\frac{3}{8}$

- 11 There are 14 blue marbles, 22 red marbles, 22 yellow marbles, and 17 green marbles in a bag. A marble is drawn randomly. What is the probability that the marble is red or yellow?

- A. $\frac{12}{25}$
 B. $\frac{14}{75}$
 C. $\frac{44}{75}$
 D. $\frac{22}{75}$

- 12 The table shows the drink preferences of 50 shoppers at the mall.

DRINK SURVEY

Drink	Number of Shoppers
A	7
B	8
C	11
D	10
E	14

What is the probability that 1 shopper, selected at random from the 50 surveyed, preferred either Drink D or Drink E?

- [A] $\frac{19}{50}$ [B] $\frac{7}{125}$ [C] $\frac{12}{25}$ [D] $\frac{29}{50}$

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Key

PA.D.2.1, 2.2 and 2.3

- ① A bag contains red, green, and blue marbles. A marble is drawn randomly from the bag, its color is recorded, and then it is put back in the bag. This is repeated a total of 30 times. The results are shown in the table.

Marble Color	Frequency
Red	3
Green	6
Blue	21

$\frac{\text{favorable outcome}}{\text{total possible outcomes}}$

What is the experimental probability of drawing a red marble?

$$\frac{3}{30} = \frac{1}{10}$$

[A] $\frac{1}{10}$

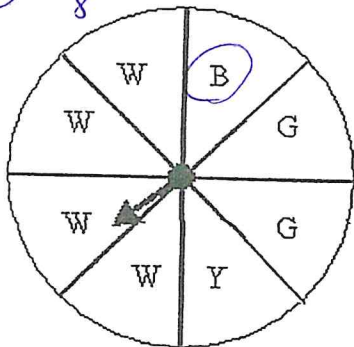
[B] $\frac{1}{9}$

[C] $\frac{1}{5}$

[D] $\frac{7}{10}$

- ② The spinner below is spun 120 times. How many times will the spinner likely land on the letter

B? $= \frac{1}{8}$



$$\frac{1}{8} = \frac{x}{120}$$

15 times

- ③ A bag contains 25 marbles. There are 7 blue, 6 green, 6 red, 3 yellow, and 3 black marbles. Without looking, Gail reaches into the bag and draws one marble. What is the probability she draws a red marble?

[A] $\frac{19}{25}$

[B] $\frac{1}{6}$

[C] $\frac{6}{25}$

[D] $\frac{6}{19}$

- ④ A single die is tossed. Find the probability of getting a 2.

[A] $\frac{1}{6}$

[B] 1

[C] $\frac{1}{2}$

[D] $\frac{5}{6}$

5. A coin is tossed and a die is rolled. What is the probability that the coin shows tails and the die shows an even number?

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

B. $\frac{1}{8}$

C. $\frac{1}{9}$

D. $\frac{1}{4}$

Independent events - find the probability of each and multiply (compound events)

$P(\text{Tail}) = \frac{1}{2}$
 $P(\text{even \#}) = \frac{1}{2}$

$\frac{1}{2} \cdot \frac{1}{2} = \frac{1}{4}$

7. A beverage company wanted to see if people in the United States liked their new logo.

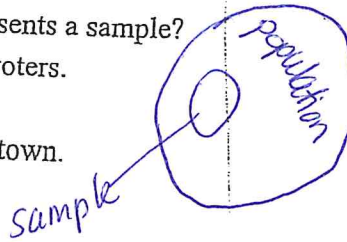
Which choice best represents a population?

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- C. The residents of the town.
- D. 242 voters.



8. A bag contains 3 pennies, 3 nickels, and 5 dimes. A coin is drawn at random and placed in a bowl. Then a second coin is drawn and placed in the bowl. What is the probability that the first coin is a penny and the second coin is a dime?

without replacement

[A] $\frac{3}{22}$

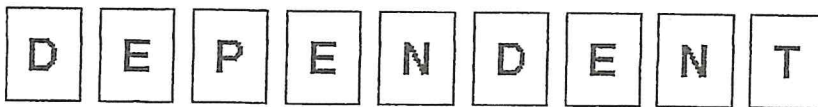
[B] $\frac{3}{11}$

[C] $\frac{8}{11}$

[D] $\frac{15}{121}$

$\frac{3}{11} \cdot \frac{5}{10}$

9. Cards spelling out DEPENDENT are shuffled and placed face-down on a table.



A card is drawn, and without replacing it, a second card is drawn. What is the probability that the first card has a P written on it and the second card has a T written on it?

[A] $\frac{1}{72}$

[B] $\frac{1}{36}$

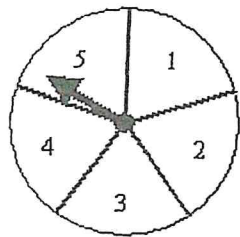
[C] $\frac{2}{17}$

[D] $\frac{1}{3}$

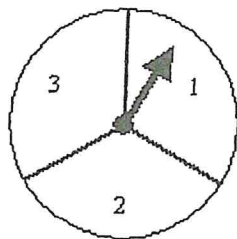
$\frac{1}{9} \cdot \frac{1}{8}$

Khan Academy has a good video "identifying a sample and population"

10 Each game wheel is divided into equal sections. The spinners on the game wheels are each spun once and the number each spinner lands on is recorded.



Spinner 1



Spinner 2

$$\frac{2}{5} \cdot \frac{1}{3}$$

What is the probability that both numbers are even numbers?

[A] $\frac{2}{15}$

[B] $\frac{11}{15}$

[C] $\frac{3}{15}$

[D] $\frac{3}{8}$

11 There are 14 blue marbles, ~~22 red marbles, 22 yellow marbles,~~ and 17 green marbles in a bag. A marble is drawn randomly. What is the probability that the marble is red or yellow?

A. $\frac{12}{25}$

B. $\frac{14}{75}$

C. $\frac{44}{75}$

D. $\frac{22}{75}$

it could be either so...
 $22 + 22 = 44$ red or yellow
 $\frac{44}{75}$ total marbles in bag.

12 The table shows the drink preferences of 50 shoppers at the mall.

DRINK SURVEY	
Drink	Number of Shoppers
A	7
B	8
C	11
D	10
E	14

$$\frac{10 + 14}{50} = \frac{24}{50} = \frac{12}{25}$$

What is the probability that 1 shopper, selected at random from the 50 surveyed, preferred either Drink D or Drink E?

[A] $\frac{19}{50}$

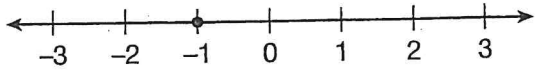
[B] $\frac{7}{125}$

[C] $\frac{12}{25}$

[D] $\frac{29}{50}$

Algebraic Reasoning & Algebra Review

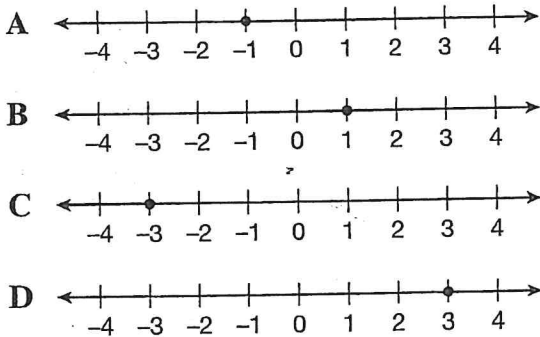
1. Which equation has its solution graphed on this number line?



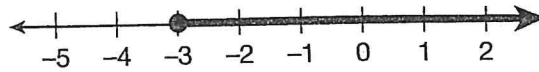
- A $-4n + 8 = -12$
- B $-4n - 8 = 12$
- C $4n - 8 = -12$
- D $4n - 8 = 12$

2. Which number line shows the solution to this equation?

$$4p - 5 = 2p + 1$$



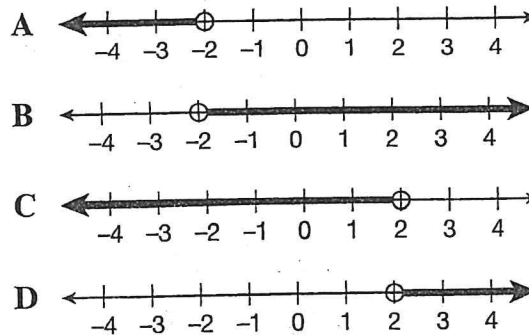
3. Which inequality represents the solution shown on this number line?



- A $3k - 27 \geq -18$
- B $3k - 27 \geq 18$
- C $3k + 27 \geq -18$
- D $3k + 27 \geq 18$

4. Which graph shows the solution to this inequality?

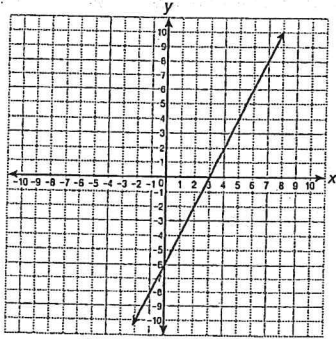
$$-7a < 14$$



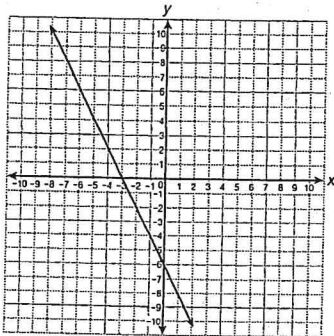
5. Which is the graph of this linear equation?

$$-2x + y = 6$$

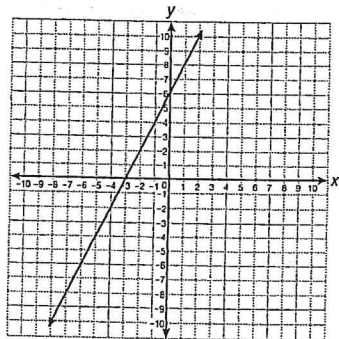
A



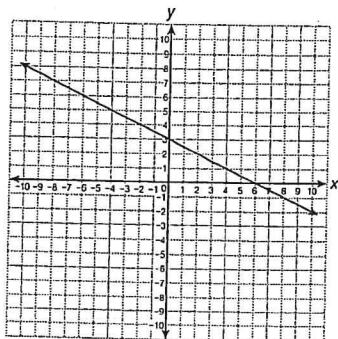
B



C



D



6. What is the slope of the line that passes through points with coordinates (2, 1) and (7, 4)?

A $-\frac{5}{3}$

B $-\frac{3}{5}$

C $\frac{3}{5}$

D $\frac{5}{3}$

7. What is the slope of the line whose equation is $y = -2x + 9$?

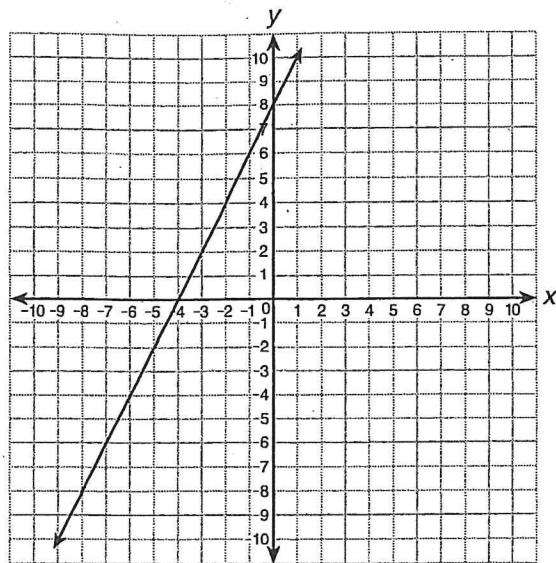
A -9

B -2

C $-\frac{2}{9}$

D 9

8. Which linear equation is graphed below?



- A $y = 2x + 8$
- B $y = -4x + 8$
- C $y = 4x + 8$
- D $y = 8x - 4$

9. A line has a slope of 5 and a y -intercept of 7. What is the equation of the line?

- A $y = 7x + 5$
- B $y = -7x + 5$
- C $y = 5x + 7$
- D $y = -5x + 7$

10. Which equation represents the data shown in this table?

x	y
1	2
2	5
3	8
4	11

- A $y = x + 1$
- B $y = 3x - 1$
- C $y = 4x - 2$
- D $y = 5x - 3$

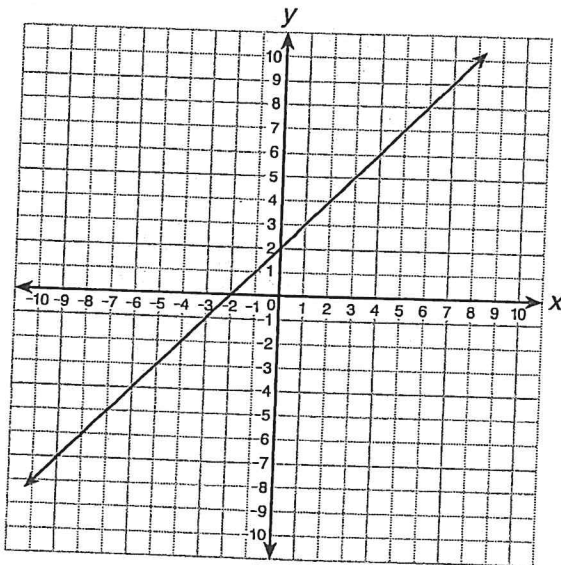
11. What is the y -intercept of the line whose equation is $y = 4x - 3$?

- A -3
- B $-\frac{4}{3}$
- C $\frac{3}{4}$
- D 3

12. The slope of a line changes from -5 to $\frac{1}{5}$. How does the new line compare with the original line?

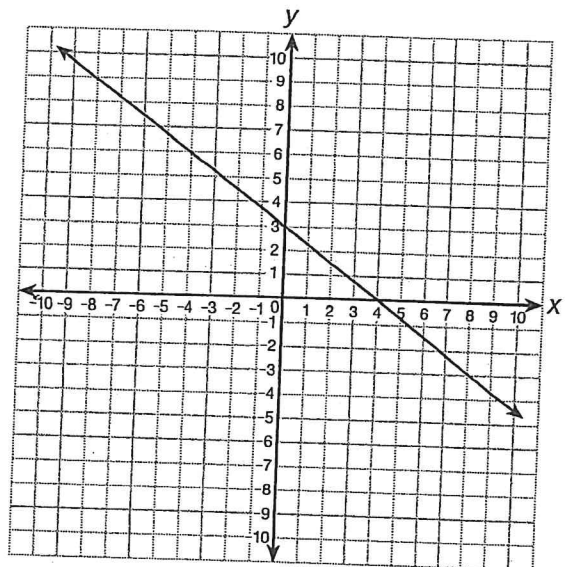
- A It is steeper and rises from left to right instead of falling from left to right.
- B It is steeper and falls from left to right instead of rising from left to right.
- C It is less steep and rises from left to right instead of falling from left to right.
- D It is less steep and falls from left to right instead of rising from left to right.

13. Which verbal description represents the data in this graph?



- A y equals the sum of x and 2.
 B y equals the sum of x and -2 .
 C y equals the product of x and 2.
 D y equals the product of x and -2 .

14. What is the slope of the line graphed below?



- A $-\frac{4}{3}$ C $\frac{3}{4}$
 B $-\frac{3}{4}$ D $\frac{4}{3}$

15. This table of values shows how hourly wages at a factory are related to years of experience.

Years of Experience	Hourly Wage
1	\$9.00
2	\$9.50
3	\$10.00
4	\$10.50
5	\$11.00
6	\$11.50

If the data were graphed with x -values representing years of experience and y -values representing hourly wages, what would be the slope of the line?

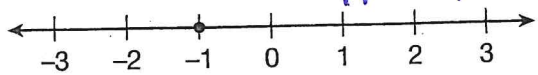
- A $\frac{1}{9}$ C $\frac{2}{1}$
 B $\frac{1}{2}$ D $\frac{9}{1}$

April 30th + May 1st

Name Key

Algebraic Reasoning + Algebra Review

1. Which equation has its solution graphed on this number line?

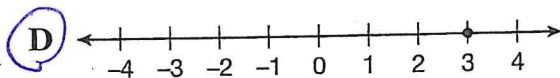
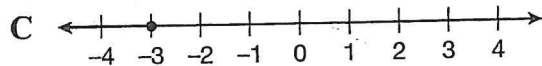
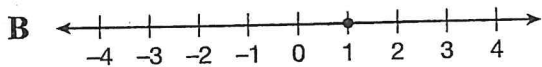
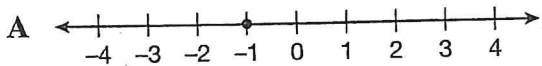


$n = -1$

- A $-4n + 8 = -12$
 - B $-4n - 8 = 12$
 - C** $4n - 8 = -12$
 - D $4n - 8 = 12$
- plug in value of n to each equation to see which makes a true statement.*

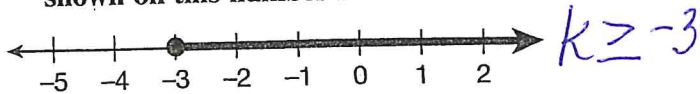
2. Which number line shows the solution to this equation?

$4p - 5 = 2p + 1$



$$\begin{array}{r}
 4p - 5 = 2p + 1 \\
 -2p \quad -2p \\
 \hline
 2p - 5 = 1 \\
 +5 \quad +5 \\
 \hline
 2p = 6 \\
 \frac{2p}{2} = \frac{6}{2} \\
 p = 3
 \end{array}$$

3. Which inequality represents the solution shown on this number line?



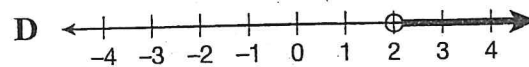
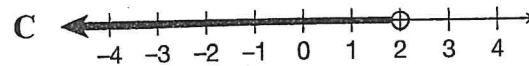
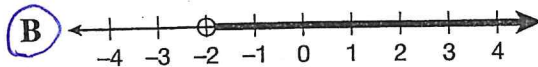
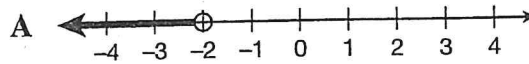
$k \geq -3$

- A $3k - 27 \geq -18$
- B $3k - 27 \geq 18$
- C $3k + 27 \geq -18$
- D** $3k + 27 \geq 18$

Solve each inequality to find the solution.

4. Which graph shows the solution to this inequality?

$-7a < 14$



$$\begin{array}{r}
 -7a < 14 \\
 \frac{-7a}{-7} < \frac{14}{-7} \\
 a > -2
 \end{array}$$

Remember to reverse the inequality!

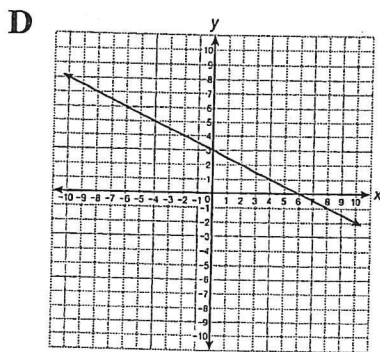
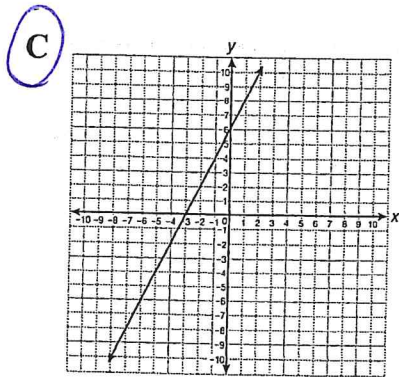
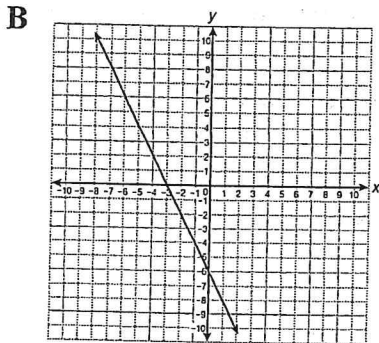
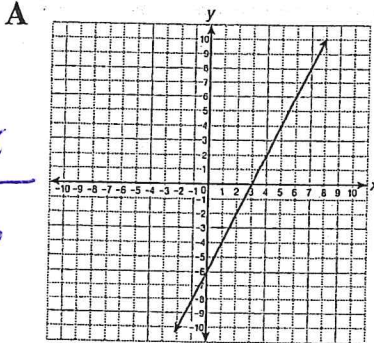
write the equation in slope-intercept form

5. Which is the graph of this linear equation?

$$-2x + y = 6$$

$x + y = 6$
 $+ 2x$ $+ 2x$

 $y = 2x + 6$
 \nearrow \nearrow
 m b



$$m = \frac{y_2 - y_1}{x_2 - x_1}$$

6. What is the slope of the line that passes through points with coordinates (2, 1) and (7, 4)?

- $x_2 \ y_2$ $x_1 \ y_1$
 A $-\frac{5}{3}$
 B $-\frac{3}{5}$
C $\frac{3}{5}$
 D $\frac{5}{3}$

$$\frac{4 - 1}{7 - 2} = \frac{3}{5}$$

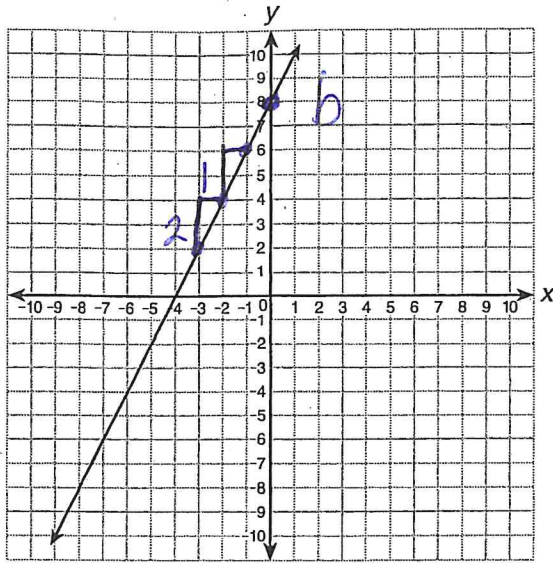
7. What is the slope of the line whose equation is $y = -2x + 9$?

- A -9
B -2
 C $-\frac{2}{9}$
 D 9

$y = mx + b$
 \nearrow slope \nwarrow y-intercept

$$y = mx + b$$

8. Which linear equation is graphed below?



- A $y = 2x + 8$
- B $y = -4x + 8$
- C $y = 4x + 8$
- D $y = 8x - 4$

$m = +\frac{2}{1}$
 $b = 8$

9. A line has a slope of 5 and a y-intercept of 7. What is the equation of the line?

- A $y = 7x + 5$
- B $y = -7x + 5$
- C $y = 5x + 7$
- D $y = -5x + 7$

$y = mx + b$
slope \rightarrow m
 \rightarrow b y-intc.

10. Which equation represents the data shown in this table?

x	y
1	2
2	5
3	8
4	11

$m = \frac{\Delta y}{\Delta x}$
 $b = -1$
 $+1 \left\{ \begin{array}{l} 2 \\ 5 \\ 8 \\ 11 \end{array} \right\} + 3$
 $m = \frac{3}{1} = 3$
 $b = -1$

- A $y = x + 1$
- B $y = 3x - 1$
- C $y = 4x - 2$
- D $y = 5x - 3$

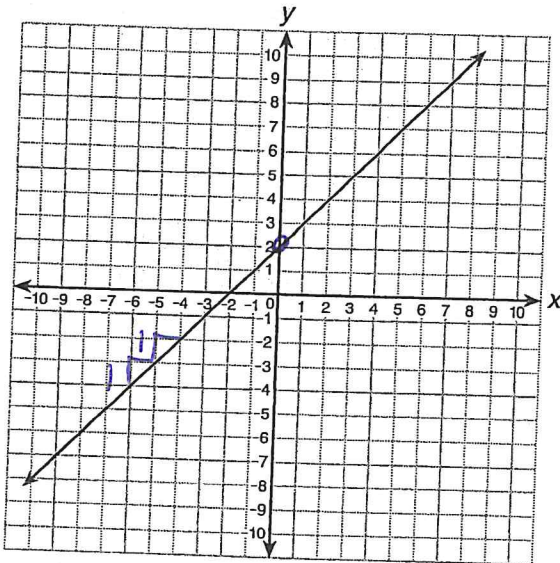
11. What is the y-intercept of the line whose equation is $y = 4x - 3$?

- A -3
- B $-\frac{4}{3}$
- C $\frac{3}{4}$
- D 3

12. The slope of a line changes from -5 to $\frac{1}{5}$. How does the new line compare with the original line?

- A It is steeper and rises from left to right instead of falling from left to right.
- B It is steeper and falls from left to right instead of rising from left to right.
- C It is less steep and rises from left to right instead of falling from left to right.
- D It is less steep and falls from left to right instead of rising from left to right.

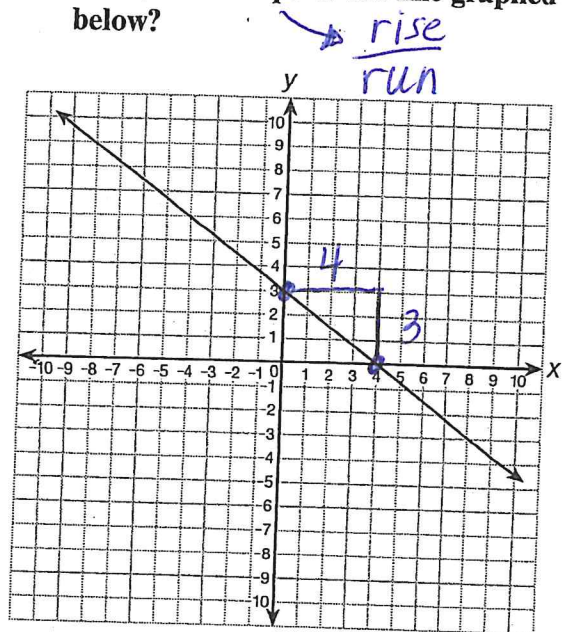
13. Which verbal description represents the data in this graph?



- A y equals the sum of x and 2.
 B y equals the sum of x and -2 .
 C y equals the product of x and 2.
 D y equals the product of x and -2 .

$$y = x + 2$$

14. What is the slope of the line graphed below?



- A $-\frac{4}{3}$ C $\frac{3}{4}$
 B $-\frac{3}{4}$ D $\frac{4}{3}$

15. This table of values shows how hourly wages at a factory are related to years of experience.

Years of Experience	Hourly Wage
1	\$9.00
2	\$9.50
3	\$10.00
4	\$10.50
5	\$11.00
6	\$11.50

} +.50

If the data were graphed with x -values representing years of experience and y -values representing hourly wages, what would be the slope of the line?

- A $\frac{1}{9}$ C $\frac{2}{1}$
 B $\frac{1}{2}$ D $\frac{9}{1}$

$\Delta = \text{change in}$ $\text{slope} = \frac{\Delta y}{\Delta x}$
 $= \frac{.5}{1} = \frac{1}{2}$