Grade 8: Practice Worksheet

Domain Name: The Number System

1.

Match each fraction with the correct division problems.

$\frac{3}{4}$ = $3\overline{)4}$ $4\overline{)3}$ $3 \div 4$ $4 \div 3$

$\frac{2}{7}$ = $7\overline{)2}$ $2\overline{)7}$ $7 \div 2$ $2 \div 7$

$\frac{1}{5}$ = $5\overline{)1}$ $1\overline{)5}$ $5 \div 1$ $1 \div 5$

2.

Write the fraction $^{2}/_{16}$ as a decimal.

- 0.125
- 0.13125
- $0.\overline{13}$
- $0.\overline{125}$
- none of the above

3.

Convert the decimal to a fraction in simplest form.

0.2 = $\frac{\square}{\square}$

4. Convert the decimal to a fraction.

0.72 =?

Grade 8: Practice Worksheet

5. Convert the decimal to a fraction.

0.4 =?

6. 6 or 18

Which expression is greater?

Hint: You can find the answer using approximation.

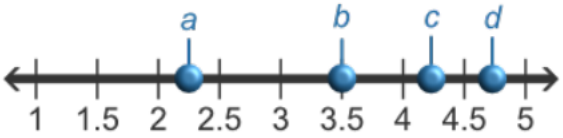
6

18

7.

Which point on the number line below is located at 1.5 ?

Hint: You can find the answer using approximation.



- *d*
- *c*
- *a*
- *b*

8.

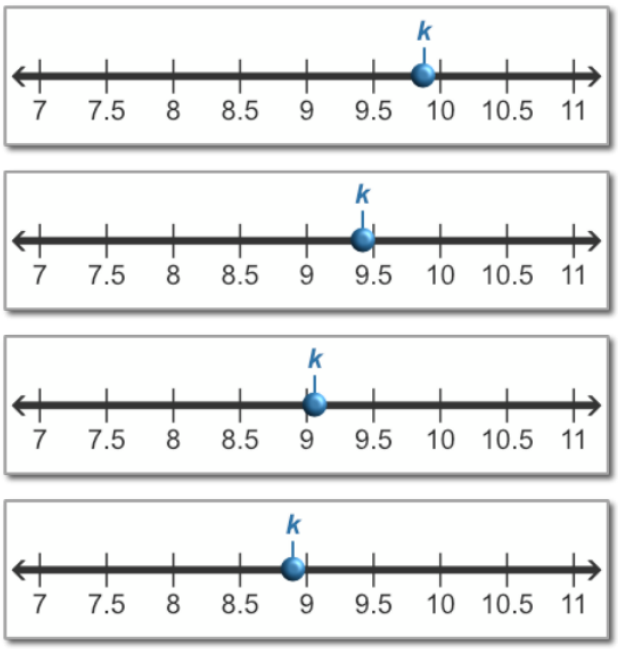
Which expression matches the point plotted on the number line below? *Hint: you can find the answer using approximation.*

- $7\frac{3}{4}$
- 3
- $\sqrt{54}$
- $7.7\overline{7}$

9.

Grade 8: Practice Worksheet

Which number line shows the correct location of k if $k = 3$?



10.

Which of the following inequalities is correct? *Hint: You can find the answer using approximation.*

- $8\frac{1}{9} > \sqrt{83} > 10.743...$
- $\sqrt{83} < 8\frac{1}{9} < 10.743...$
- $8\frac{1}{9} < \sqrt{83} < 10.743...$
- $10.743... > 8\frac{1}{9} > \sqrt{83}$

11.

Which of the following statements are true of **rational numbers**?

Check all that are true.

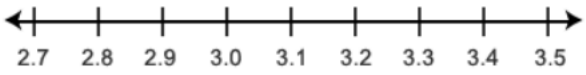
- [ ] Rational numbers can NOT be written as fractions.
- [ ] A repeating decimal is a rational number.
- [ ] The square root of four is an example of a rational number.
- [ ] A rational number can have zero as the denominator.
- [ ] In decimal form, rational numbers continue on forever without ever repeating.

Grade 8: Practice Worksheet

12.

Drag the point to the approximate location of the irrational number on the number line.

$\pi = 3.14159...$



13.

The following irrational number is shown on which number line?

$\sqrt{10} \approx 3.162$

14.

Evaluate.

$\sqrt{64} =$ ☐

15.

Grade 8: Practice Worksheet

Categorize each square root as greater or less than the given number.

Less than 3	Greater than 3

$\sqrt{7}$ $\sqrt{3}$ $\sqrt{25}$ $\sqrt{11}$ $\sqrt{2}$

16.

Evaluate:

$\sqrt{30}$ is _____

- 5.5
- Greater than 4 and less than 5
- Greater than 6 and less than 7.
- 5
- Greater than 5 and less than 6
- none of the above

17.

Grade 8: Practice Worksheet

Categorize each square root as greater or less than the given number.

Less than 7	Greater than 7

$\sqrt{6}$ $\sqrt{41}$ $\sqrt{48}$ $\sqrt{53}$ $\sqrt{65}$

18.

Which of the following statements are true of **rational numbers**?

Check all that are true.

- ☐ Rational numbers can be written as fractions.
- ☐ Pi (π) is an example of a rational number.
- ☐ The square root of four is an example of a rational number.
- ☐ One divided by zero is an example of a rational number.
- ☐ In decimal form, rational numbers continue on forever without ever repeating.

19.

Grade 8: Practice Worksheet

Categorize each square root as greater or less than the given number.

Less than 3	Greater than 3

$\sqrt{7}$ $\sqrt{3}$ $\sqrt{25}$ $\sqrt{11}$ $\sqrt{2}$

20.

Which of the following inequalities is correct? *Hint: You can find the answer using approximation.*

- $10\frac{3}{4} < 12.31... < \sqrt{81}$
- $\sqrt{81} > 10\frac{3}{4} > 12.31...$
- $12.31... > \sqrt{81} > 10\frac{3}{4}$
- $\sqrt{81} < 10\frac{3}{4} < 12.31...$

Domain Name: Expressions and Equations

1.

Evaluate.

$(-5)^2 =$ ☐

2.

Grade 8: Practice Worksheet

Evaluate.

$(-10)^4 =$ ☐

3.

Determine if the solution to each exponent is positive or negative.

$(-5)^2 =$ ☐

$-(5)^2 =$ ☐

$(-2)^3 =$ ☐

$-(2)^3 =$ ☐

positive negative

4.

$12 + (-2)^3 =$ ☐

5.

$(7 - 3)^2 =$ ☐

6.

Evaluate:

$6^{-2} =$ ☐

7.

Grade 8: Practice Worksheet

Select the expression equivalent to the following:

$$\frac{1}{10^5} = ?$$

- 100^3
- $(1/10)^{-5}$
- 10^{-5}
- 10^5
- none of the above

8.

Select the expression equivalent to the following:

$$\frac{1}{3^{-2}} = ?$$

- 3^2
- 2^{-3}
- 2^3
- $(1/3)^{-2}$
- none of the above

9.

Rewrite the expression as a single term.

$2^7 \times 2^3$

- 2^{10}
- 2^{21}
- 14^6
- 40^1
- 4^{10}

10.

Grade 8: Practice Worksheet

Rewrite the expression as a single term.

$14^4 \times 14^8$

- 14^{32}
- 28^{16}
- 14^{12}
- 28^{14}
- 28^{12}

11.

Rewrite the expression as a single term.

$$\frac{12^2}{12^2}$$

- 12^1
- 12^4
- 24^4
- 1
- 6^2

12.

Select the expression that is equivalent to the following:

$$\frac{3^{-2}}{3^{-6}}$$

- 3^8
- $1/3^4$
- $1/3^8$
- 3^4
- none of the above

13.

Grade 8: Practice Worksheet

Select the expression that is equivalent to the following:

$8^{-5} \times 8^{2}$

- 8^{3}
- $1/8^{7}$
- 8^{7}
- $1/8^{3}$
- none of the above

14.

Rewrite the expression as a single term.

$(2^{3})^{6}$

- 2^{18}
- 9^{2}
- 6^{6}
- 6^{3}
- 2^{9}

15.

Select the expression that is equivalent to the following:

$(2x^{5})^{4}$

- $8x^{20}$
- $8x^{9}$
- $2x^{9}$
- $2x^{20}$
- $16x^{20}$

16.

Grade 8: Practice Worksheet

Select the expression that is equivalent to the following:

$9x^2y^4$

- $(3xy^2)^2$
- $(3x^2y^4)^3$
- $(9xy^2)^2$
- $(9xy)^2$
- none of the above

17.

Select the expression that is equivalent to the following:

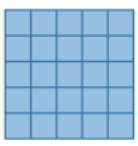
$(2^2 \times 2^{-5})^3$

- 2^9
- $1/2^1$
- $1/2^9$
- 2^1
- none of the above

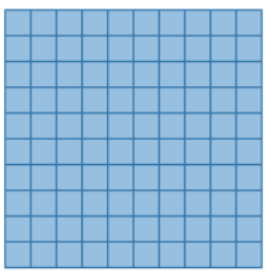
18.

Write the square root of each number.

$\sqrt{25} = \square$



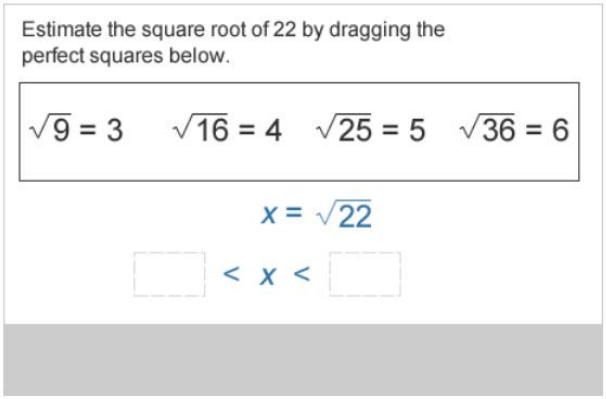
$\sqrt{100} = \square$



19.

Grade 8: Practice Worksheet

Part 1:



$\sqrt{36}$ $\sqrt{25}$ $\sqrt{16}$ $\sqrt{9}$

Part 2:

Select the true statement.

- [ ] The square root of 22 is greater than 4 and greater than 5.
- [ ] The square root of 22 is less than 4 and less than 5.
- [ ] The square root of 22 is greater than 4 but less than 5.

20.

Grade 8: Practice Worksheet

Drag the correct expression then solve for the cube root of 64.

$64 =$ ☐

Solve for the cube root of 64.

$\sqrt[3]{64} =$ ☐

$4 \times 4 \times 4$ $5 \times 5 \times 5$

21.

$\sqrt{\frac{9}{64}} =$ ☐

22.

Evaluate.

$\sqrt[3]{-343} =$ ☐

23.

What is the **coefficient** in the following number in scientific notation?

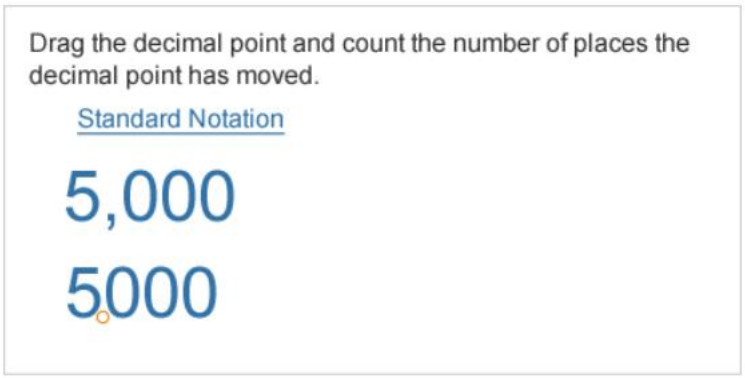
3.45×10^4

- 4
- 3.45
- 10^4
- 3

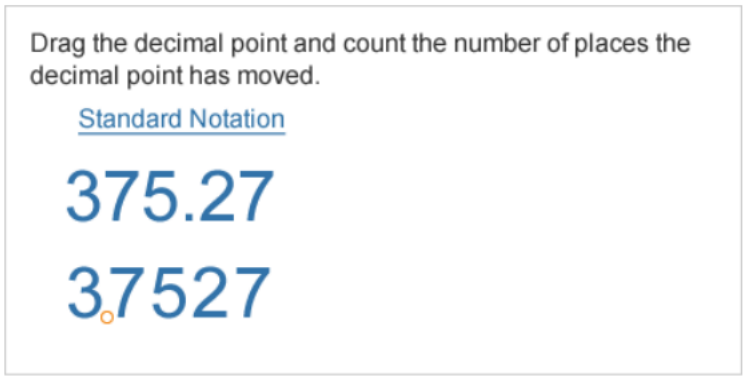
24.

Grade 8: Practice Worksheet

25.



26.



Grade 8: Practice Worksheet

Drag each exponent to the correct position for each number written in scientific notation.

$0.00342 = 3.42 \times 10^{\square}$

$0.0342 = 3.42 \times 10^{\square}$

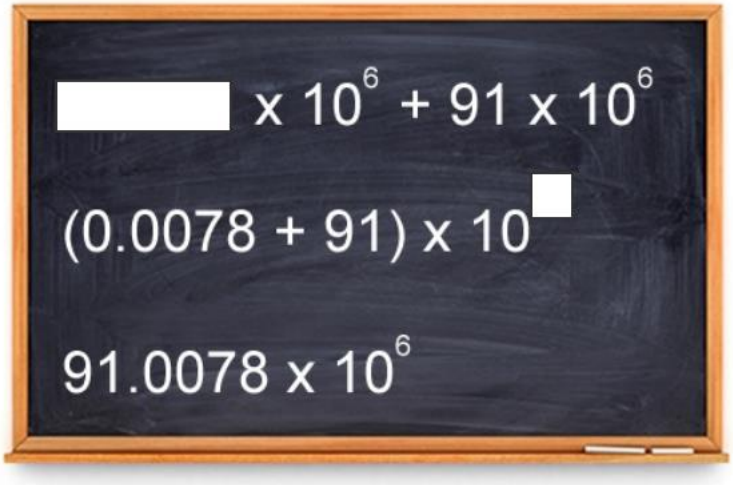
$0.000342 = 3.42 \times 10^{\square}$

-2 -3 -4 -5

27.

Enter the missing values to add the following two numbers written in scientific notation.

$7.8 \times 10^{3} + 91 \times 10^{6}$



28.

Grade 8: Practice Worksheet

Drag up the Additive Inverse to both sides of the equation, then enter the solution for the variable *d*.

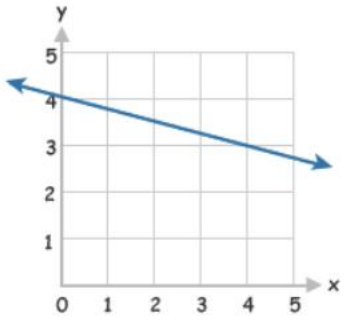
$d + 2 = 6$

$d =$ ☐

+2 -2 +6 -6

29.

Select which student solved the slope formula correctly.



Student 1

Slope = $\frac{\text{Rise}}{\text{Run}}$

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

Slope = $\frac{4 - 3}{4 - 0}$

Slope = $\frac{1}{4}$

Student 2

Slope = $\frac{\text{Rise}}{\text{Run}}$

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

Slope = $\frac{3 - 4}{4 - 0}$

Slope = $-\frac{1}{4}$

30.

Grade 8: Practice Worksheet

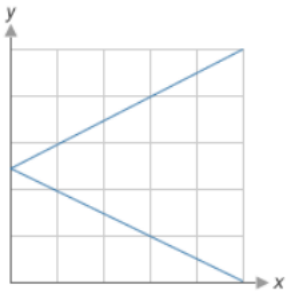
Find the slope between two points on a graph that are located at (3, 5) and (5, 6).

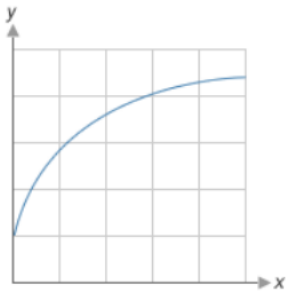
- 0.5
- 0.6
- 0.7
- -0.5

Domain Name: Functions

1.

Determine if each graph represents a function.





2.

Grade 8: Practice Worksheet

Determine if each table represents a function.

X	Y
1	1
2	5
2	9
4	12

X	Y
7	4
8	-2
11	3
15	-1

3.

State the **domain** for the set of points.

{(8, 8), (5, 7), (-4, 8), (4, 8)}

- Domain = {-7, 4, 5, 8}
- Domain = {-4, 4, 5, 8}
- Domain = {7, 4, 5, 8}
- Domain = {-8, 4, 5, 8}

4.

Grade 8: Practice Worksheet

Determine if each table represents a function.

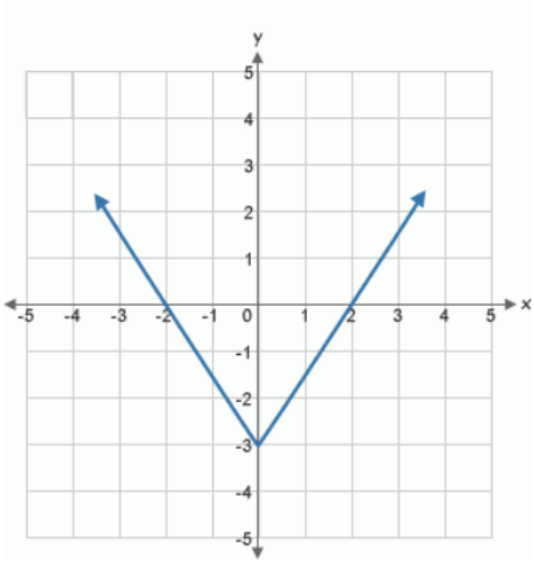
X	Y
1	2
2	3
3	4
2	1

X	Y
7	3
8	3
11	4
15	4

X	Y
5	-3
7	-4
9	-5
11	-6

5.

Determine if the following relationship is a function or is not a function.



- Function
- Not a function

6.

Grade 8: Practice Worksheet

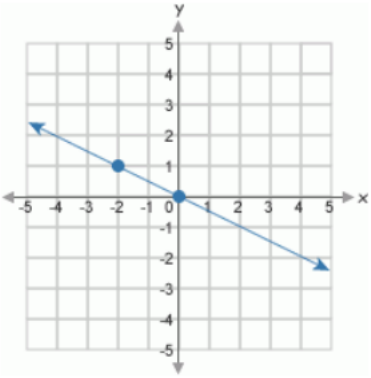
Select the points in this relation that show it is NOT a function.
If it is a function, select "This relation is a function."

(1, 2), (2, 3), (3, 4), (1, 5), (5, 6)

or

This relation is a function.

7.



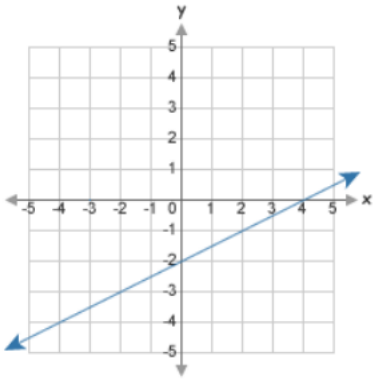
Which of the following linear equations matches the graph?

- $y = x/3$
- $y = -2x$
- $y = (1/2)x$
- $y = 2x$
- $y = -(1/2)x$

8.

Grade 8: Practice Worksheet

Drag the circle to the location of the *y*-intercept in the graph, then enter the value in the box.

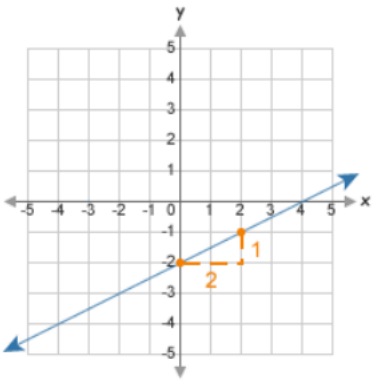


y-intercept

$b =$ ☐

9.

Use the graph to find the rate of change for the function.



Rate of Change

$$m = \frac{\text{Rise}}{\text{Run}} = \frac{\square}{\square}$$

1

2

10.

Grade 8: Practice Worksheet

x	y
0	1
1	3
2	5
3	7

Which function equation matches the function table?

- $y = \frac{1}{2}x + 1$
- $y = 2x + 3$
- $y = \frac{1}{2}x - 1$
- $y = 3x + 1$
- $y = 2x + 1$

11.

Drag the *y*-intercept and the highlighted point into the equation, then solve for the rate of change, *m*.

X	Y
4	11
6	15

$y = mx + b$

$\square = m(\square) + \square$

$7 = 2m + 3$

$4 = 2m$

$\square = m$

0 3 2 7

12.

Grade 8: Practice Worksheet

Drag the highlighted points into the formula for the rate of change, then simplify.

X	Y
2	6
3	9

Rate of Change

$$m = \frac{\square - \square}{\square - \square} = \frac{\square}{\square}$$

Formula for Rate of Change $m = \dfrac{y_2 - y_1}{x_2 - x_1}$

0 0 3 1

13.

Find the initial point, or *y*-intercept, in the following linear function:

$y = -2x + 12$

The initial point of the function is $b =$ ☐

14.

Find the rate of change, or slope, in the following equation:

$y = -2x + {}^{1}/_{5}$

The rate of change is $m =$ ☐

15.

Grade 8: Practice Worksheet

Drag the input value into the equation, then simplify to find the output.

$f(x) = 21 - 3x$ find $f(\quad)$

$f(6) = 21 - 3(\square)$

$f(6) = 21 - \square$

$f(6) = \square$

6

16.

During a storm, the distance in feet between the lightning and your location was represented by $f(x) = 1{,}200x$, where x is the number of seconds between the lightning and thunder. At one point, you counted 4 seconds between the lightning and the thunder. How far were you from the lightning?

☐ ft

17.

A moving truck rental costs a flat fee of $75 and $2 per mile driven. If you drive a moving truck for 10 miles, how much is the rental for the moving truck?

$☐

18.

Grade 8: Practice Worksheet

Drag the input value into the equation, then simplify to find the output.

$f(x) = 3x^2 - 2$ find $f(\quad)$

$f(5) = 3(\square)^2 - 2$

$f(5) = 3(\square) - 2$

$f(5) = 75 - 2$

$f(5) = \square$

5

19.

$f(x) = 5x$

x	f(x)
0	0
1	5
2	10
3	15

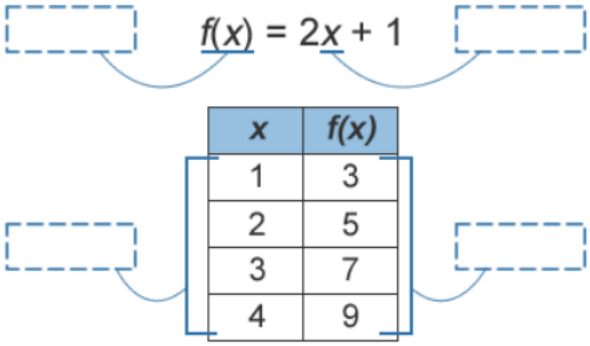
In the function $f(x) = 5x$, **f(x)** is which of the following?

- The output
- Only 0, 5, 10, or 15
- The domain
- The same as *x*
- The input

20.

Grade 8: Practice Worksheet

Label the following function elements.



Input

Range

Output

Domain

21.

Grade 8: Practice Worksheet

Use the tables to test if each relation is a function.

$y = 2x + 1$

X	Y
1	3
2	5
3	7
4	9

$y^2 = x$

X	Y
3	-9
3	9
4	-16
4	16

$y = x^2$

X	Y
-1	1
0	0
1	1
2	4

☐ ☐ ☐

22.

Show that the relation $5 = y^2 - x$ is not a function by filling in the table of values.

x	y
	2
4	3
31	-6
31	

23.

What is the output, or y-value, when you input $x = -4$ into the function:

$y = x^3 + x^2 + 2x + 5$

$y =$ ☐

24.

What is the output, or y-value, when you input $x = 1$ into the function:

$y = x^2 + 8x - 19$

$y =$ ☐

Grade 8: Practice Worksheet

25.

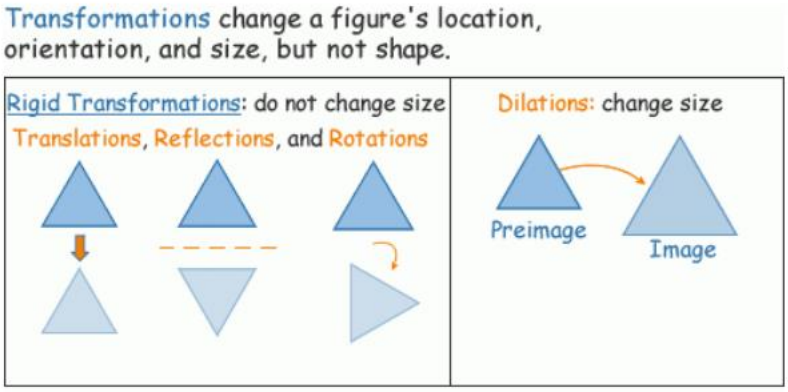
What is the output, or y-value, when you input $x = 1$ into the function:

$y = x^2 + 8x - 19$

$y =$ ☐

Domain Name: Geometry

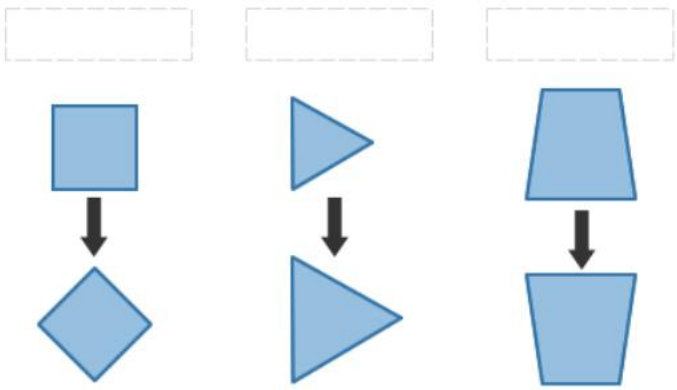
1.



The result of a transformation is called an ☐, while the original figure is called a ☐.

2.

Label each change as a rigid transformation or a dilation.



rigid transformation

dilation

Grade 8: Practice Worksheet

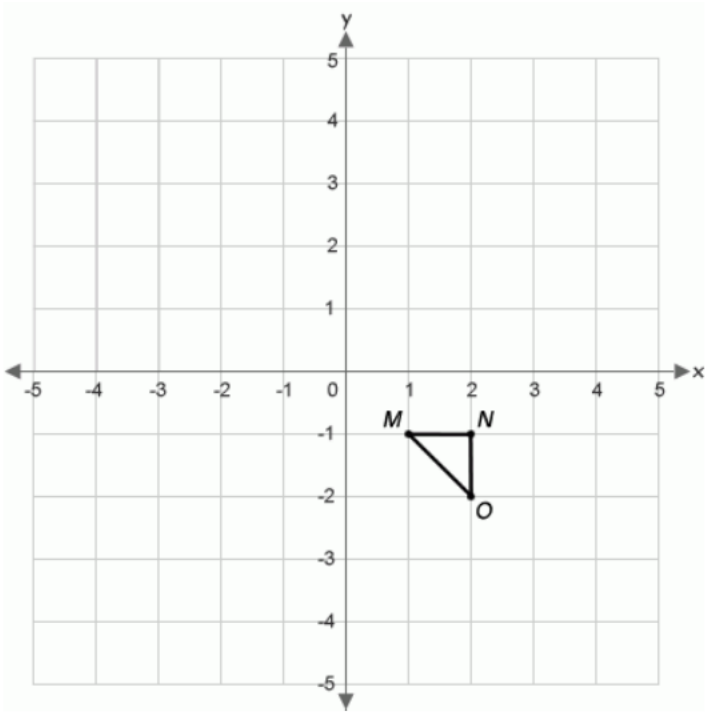
3.

A transformation can change which of the following?

Check all that are true.

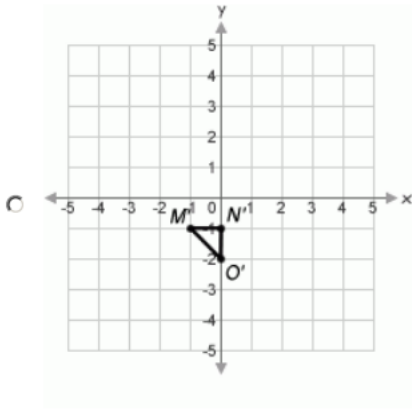
- ☐ Location
- ☐ Shape
- ☐ Number of sides
- ☐ Orientation
- ☐ Size

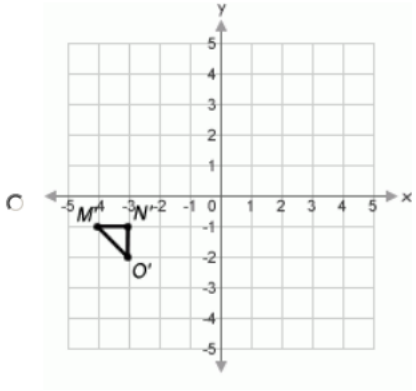
4.

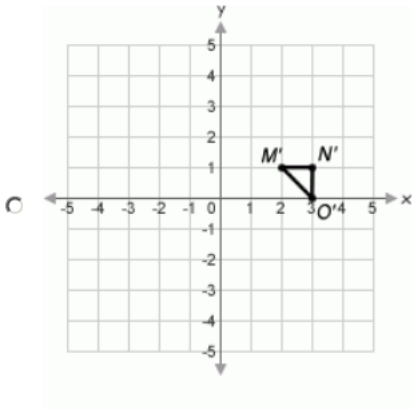


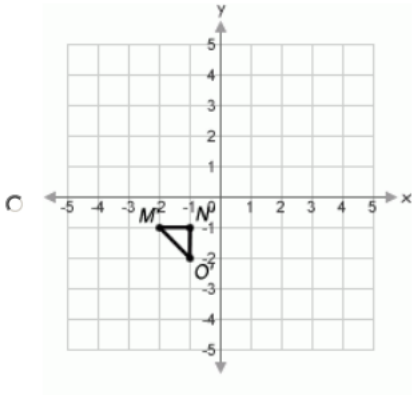
Translate the triangle *MNO* 3 units to the left.

Grade 8: Practice Worksheet



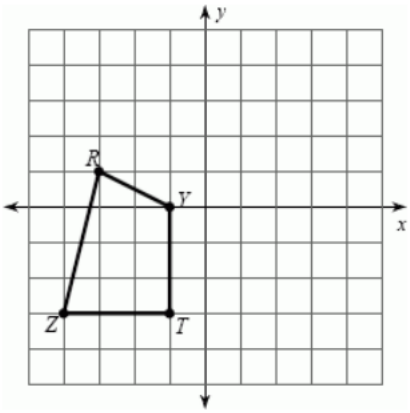




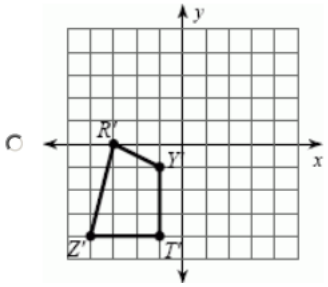


Grade 8: Practice Worksheet

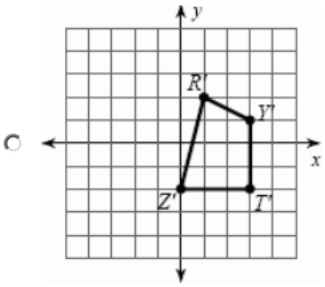
5.

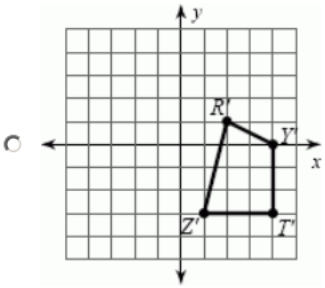


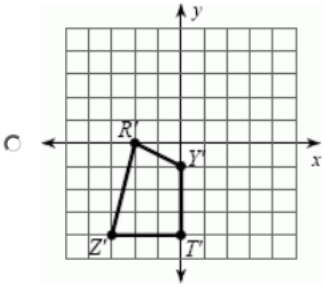
Translate the polygon 5 units right.



Grade 8: Practice Worksheet







○ none of the above

6.

Triangle *ABC* has coordinates *A*(4, 1), *B*(5, 9), and *C*(2, 7). If the triangle is translated 7 units to the left, what are the coordinates of *B'*?

(,)

7.

Quadrilateral *ABCD* has coordinates *A*(2, 2), *B*(-3, 2), *C*(-2, -7), and *D*(-5, 1). If the quadrilateral is translated 2 units to the left, what are the coordinates of *D'*?

(,)

8.

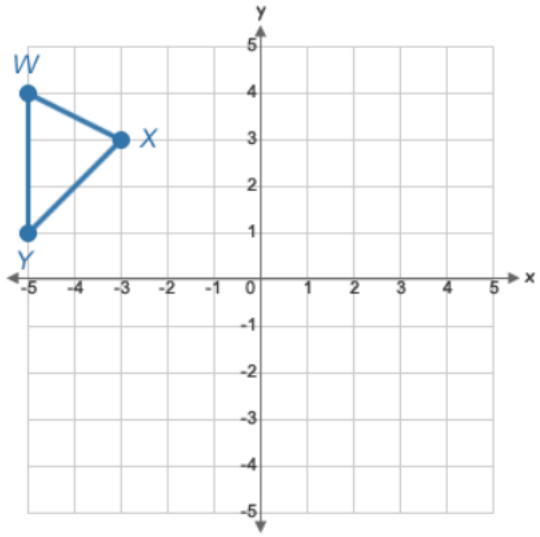
In trapezoid *ABCD*, point *D* has coordinates *D*(1,3). If the trapezoid is translated 2 units left and 5 units down, what are the coordinates of *D'*?

(,)

9.

Grade 8: Practice Worksheet

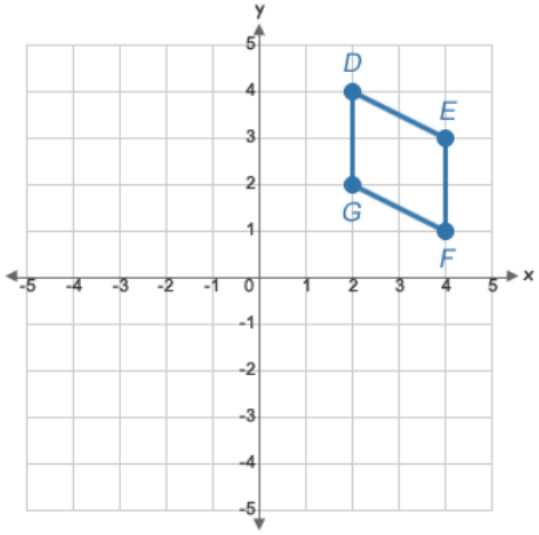
Drag the coordinates of the figure *WXY* after the figure is reflected over the *y*-axis.



10.

Grade 8: Practice Worksheet

Drag the coordinates of the figure *DEFG* after the figure is reflected over the *y*-axis.



D' E' F'

G'

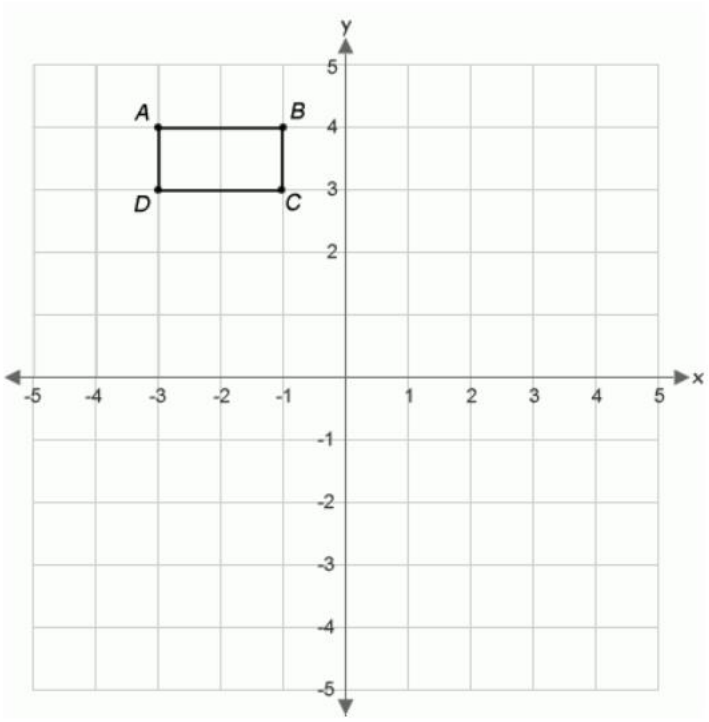
11.

A quadrilateral has vertices *F*(2, -2), *G*(3, 1), *H*(1, -2) and *J*(-2, 4). If the quadrilateral is reflected over the *y*-axis, what are the coordinates of *F'*?

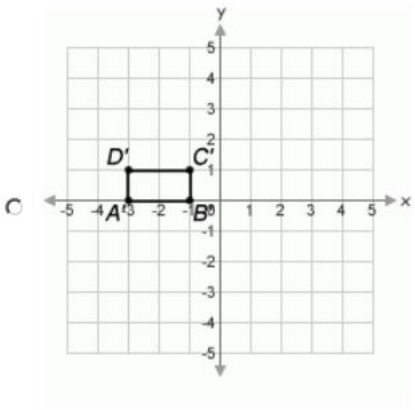
(,)

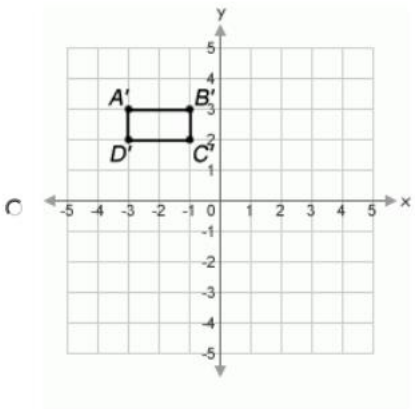
12.

Grade 8: Practice Worksheet

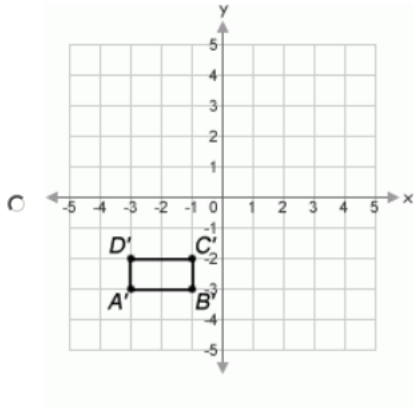


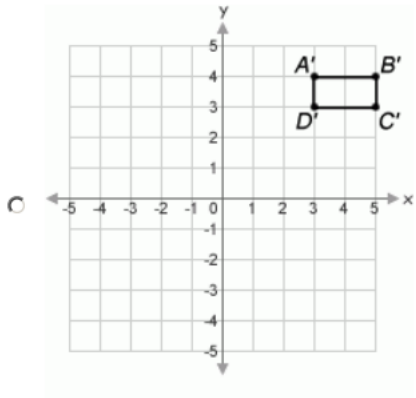
Reflect the rectangle *ABCD* over the line $y = 2$.





Grade 8: Practice Worksheet

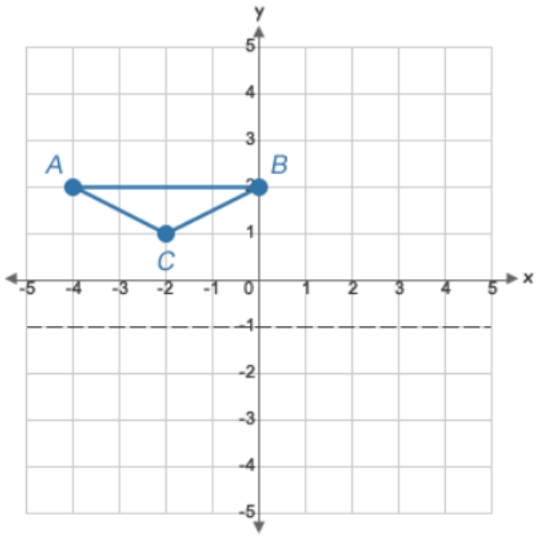




13.

Grade 8: Practice Worksheet

Drag the coordinates of the figure *ABC* after the figure is reflected over the line $y = -1$.



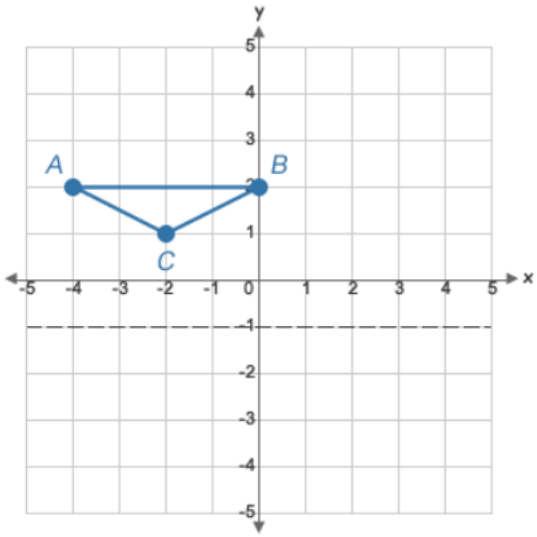
A' *B'*

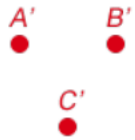
C'

14.

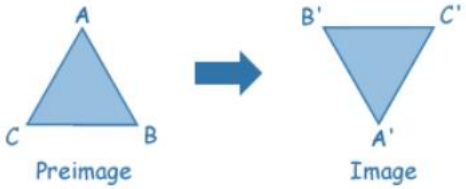
Grade 8: Practice Worksheet

Drag the coordinates of the figure *ABC* after the figure is reflected over the line $y = -1$.





15.

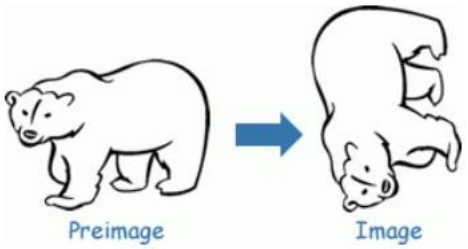


What is the clockwise angle of rotation?

- 90°
- 180°
- 215°
- 270°
- 360°

16.

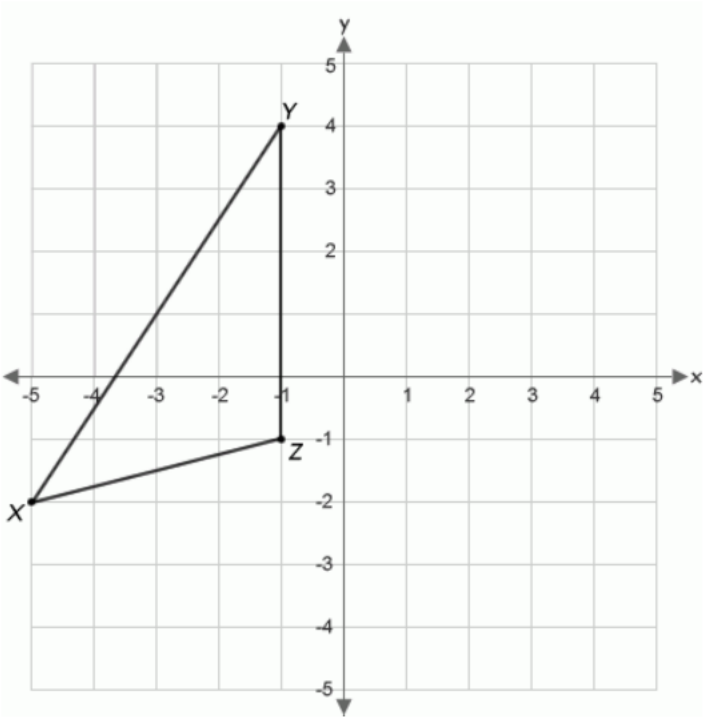
Grade 8: Practice Worksheet



What is the clockwise angle of rotation?

- 90°
- 180°
- 270°
- 360°
- 450°

17.



If triangle *XYZ* is rotated 180° clockwise about the origin, what are the coordinates of *Y'*?

(,)

18.

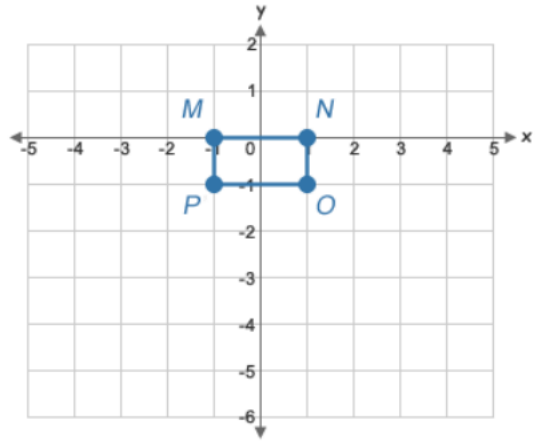
Grade 8: Practice Worksheet

Triangle *ABC* has coordinates *A*(2, -5), *B*(1, -3), and *C*(6, 1). If the triangle is rotated 90° counterclockwise about the origin, what are the coordinates of *A'*?

(☐ , ☐)

19.

Write the coordinates of the figure MNOP after the figure has been dilated by a scale factor of 5.

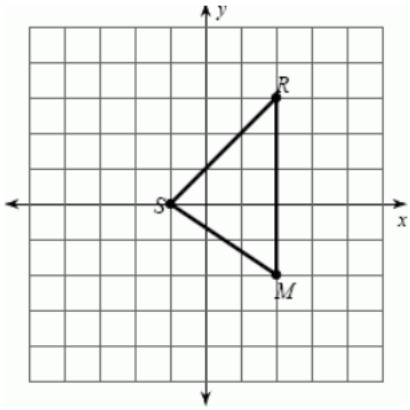


M	N	O	P
(-1, 0)	(1, 0)	(1, -1)	(-1, -1)

M'	N'	O'	P'
(-5, 0)	(☐ , ☐)	(5, -5)	(☐ , ☐)

20.

Grade 8: Practice Worksheet



Find the coordinates of the vertices after a dilation of $^{3}/_{2}$.

- S'(–1.5, 0), R'(1, 4.5), M'(3, –3)
- S'(-1.5, 0), R'(3, 4.5), M'(3, –3)
- S'(–1.5, 0), R'(3, 4.5), M'(0, –3)
- S'(-1.5, 2), R'(3, 5), M'(3, –3)
- none of the above

21.

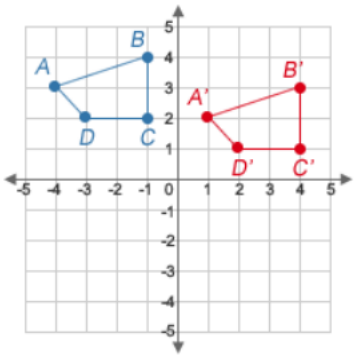
The figure *ABCDE* has vertices *A*(1, 0), *B*(3, 0), *C*(4, 1), *D*(4, 2), and *E*(1, 2). Which of the following describes the translation if *E'* has coordinates (4, -7)?

- 3 units right and 9 units down
- 9 units left and 3 units up
- 3 units left and 9 units down
- 3 units left and 9 units up
- none of the above

22.

Grade 8: Practice Worksheet

Describe the translation of ABCD.



5 units to the right and 1 unit down

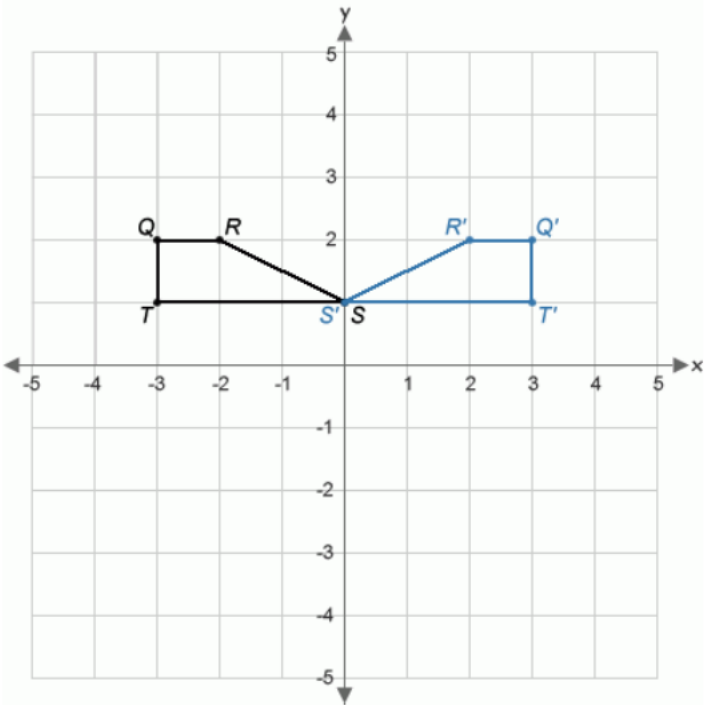
5 units to the right and 1 unit up

4 units to the right and 2 units down

4 units to the right and 2 units up

23.

Grade 8: Practice Worksheet

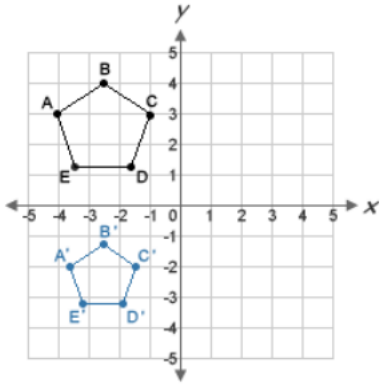


Describe the transformation from *QRST* to *Q'R'S'T'*.

- Reflection, but not over the *x*-axis or the *y*-axis
- Reflection over the *x*-axis
- Reflection over the *y*-axis
- none of the above

24.

Grade 8: Practice Worksheet

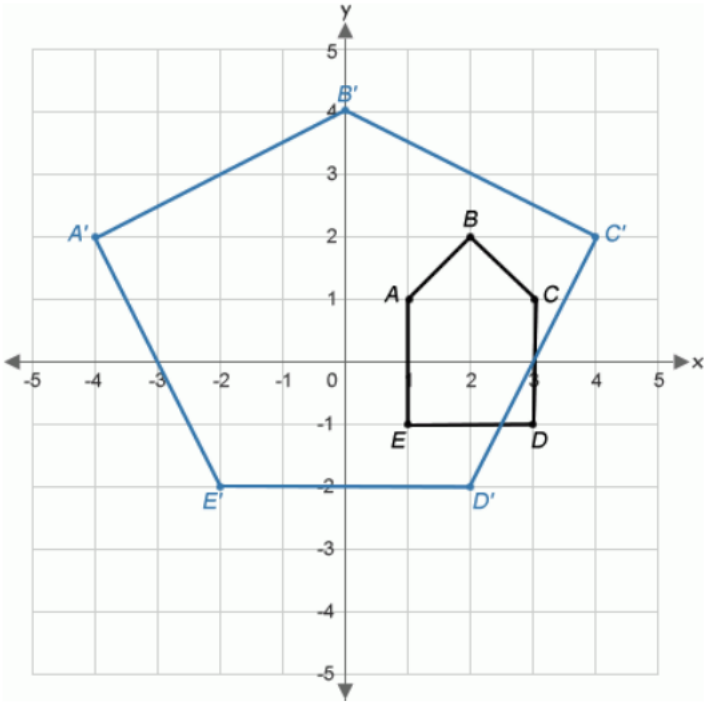


Describe the transformation.

- dilation with a scale factor of $\frac{1}{2}$
- dilation with a scale factor of 2
- dilation with a scale factor of 3
- dilation with a scale factor of 4
- none of the above

25.

Grade 8: Practice Worksheet



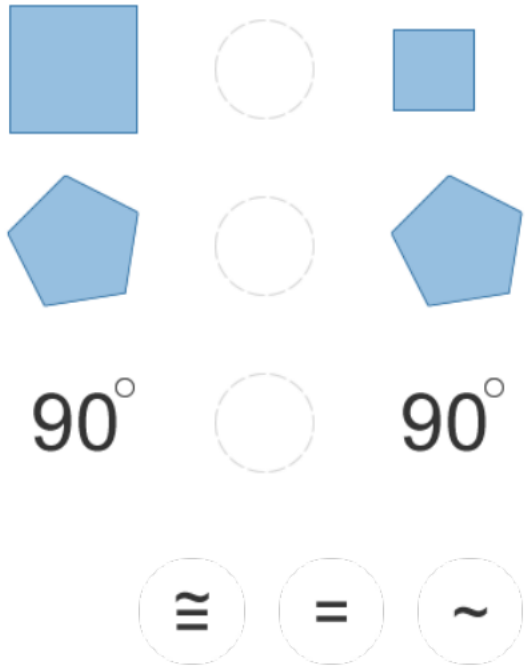
What is the relation between the final image and the original preimage?

- Congruent
- Similar
- Neither congruent nor similar

26.

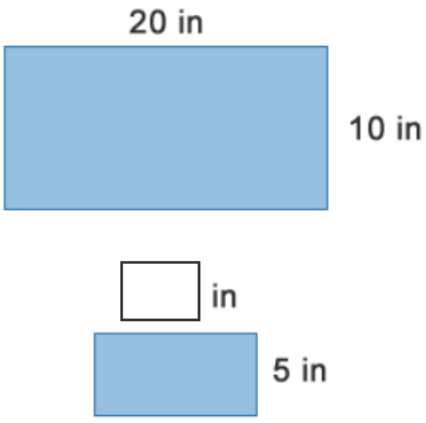
Grade 8: Practice Worksheet

Drag the correct symbols below.



27.

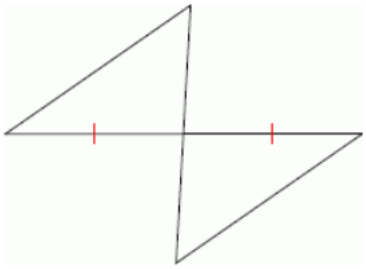
Find the missing side if the two rectangles are similar.



28.

Grade 8: Practice Worksheet

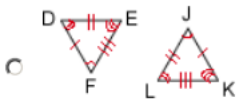
Which rule proves that these triangles are congruent?

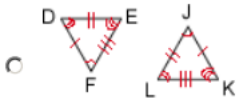


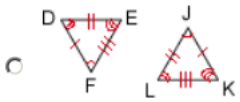
- SAS (Side-Angle-Side)
- SSS (Side-Side-Side)
- AAS (Angle-Angle-Side)
- ASA (Angle-Side-Angle)
- RHS (Right-angle-Hypotenuse-Side)
- none of the above

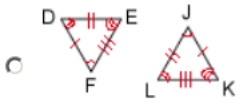
29.

Which of these correctly shows $\triangle FDE \cong \triangle KLJ$?





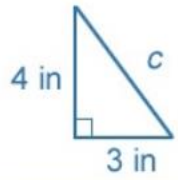


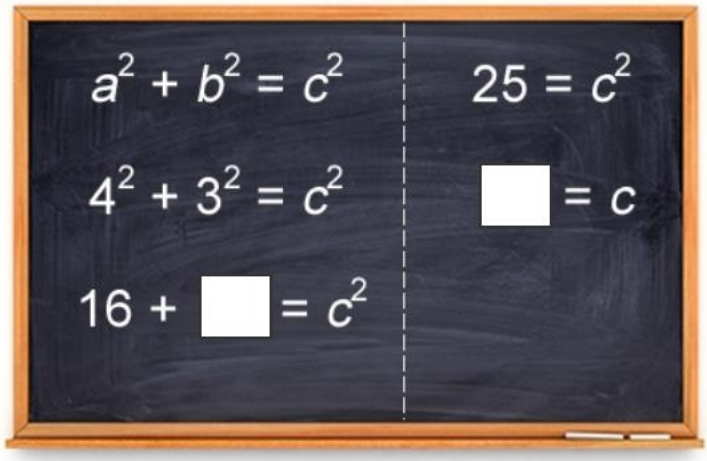


30.

Grade 8: Practice Worksheet

Fill in the missing values to find the missing value of the triangle.





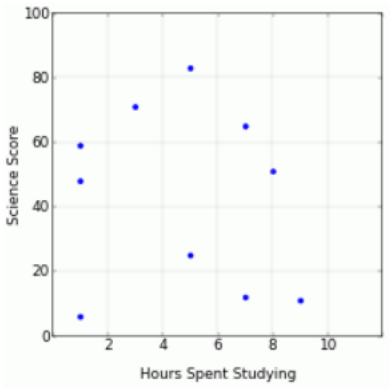
Domain Name: Statistics and Probability

1.

Which scatter plot represents the data shown in this table?

Hours Spent Studying	7	6	5	9	3	4	1	2	8	10
Science Score	72	99	96	93	22	58	42	54	82	94

C



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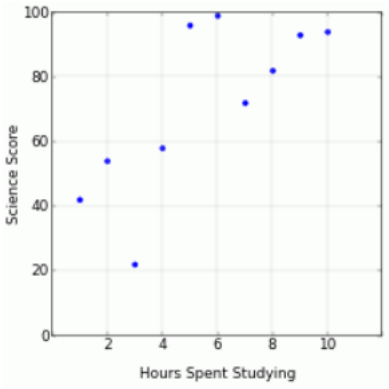
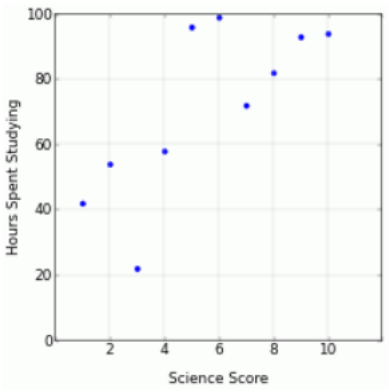
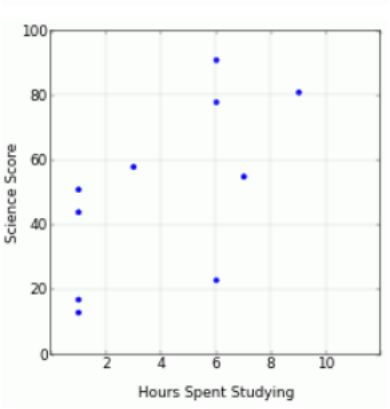
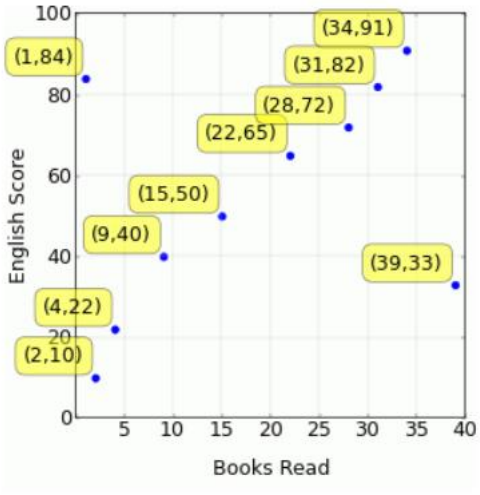






2.

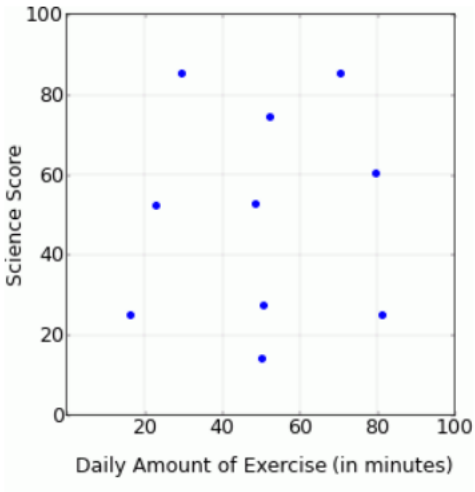
Grade 8: Practice Worksheet



What was the English score when a student read 28 books?

- 72
- 82
- 22
- 65

3.

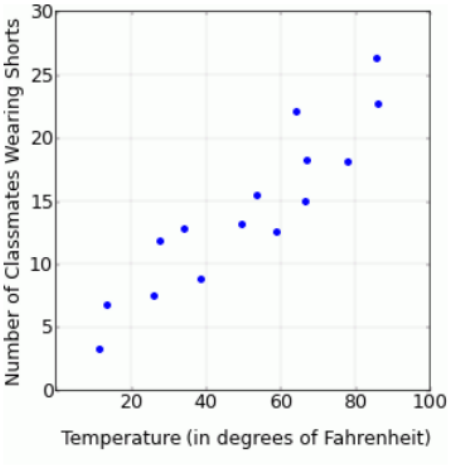


Determine the trend between daily amount of exercise and science scores.

- Linear
- Nonlinear

4.

Grade 8: Practice Worksheet



What type of relationship does this plot show between temperature and number of classmates wearing shorts?

- Positive
- Negative
- No association

5.

Using the table below, what type of relationship is there between number of wins per season and average attendance?

Number of Wins Per Season	1	1	10	14	18	21	24	25	28	29
Average Attendance (in hundreds)	4	4	22	30	38	44	50	52	58	60

- Positive
- Negative
- No association

6.

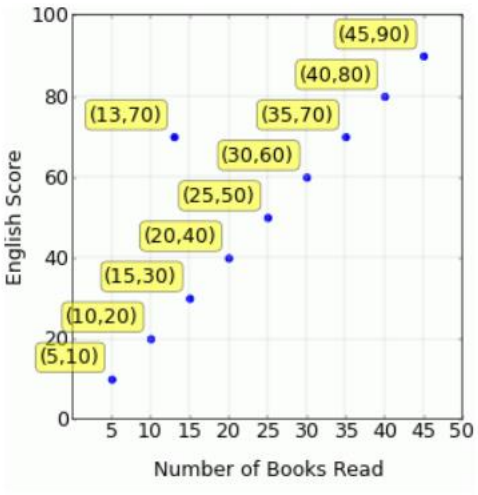
Using the table below, what type of relationship is there between negative reviews and daily restaurant attendance?

Negative Reviews	12	5	19	6	14	1	17	9	13	8
Daily Restaurant Attendance	126	91	161	96	136	71	151	111	131	106

- Positive
- Negative
- No association

7.

Grade 8: Practice Worksheet



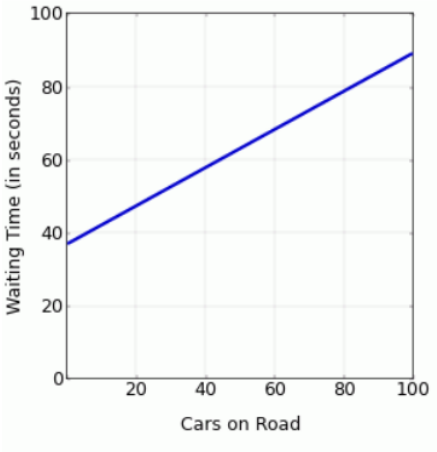
Which data point(s) are outside the cluster, in other words, the outliers?

Check all that are true.

- [ ] (15, 30)
- [ ] (40, 80)
- [ ] (45, 90)
- [ ] (13, 70)
- [ ] (25, 50)

8.

Grade 8: Practice Worksheet

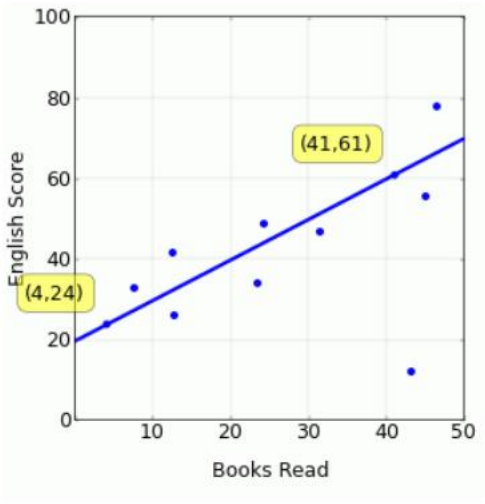


Which of the following statements correctly explains the relationship of the two variables in the graph?

- There is a negative linear association between cars on road and waiting time. As cars on road increase, the waiting time decreases.
- There is a positive linear association between cars on road and waiting time. As cars on road increase, the waiting time increases.
- There is a positive linear association between cars on road and waiting time. As cars on road increase, the waiting time decreases.
- There is a negative linear association between cars on road and waiting time. As cars on road increase, the waiting time increases.

9.

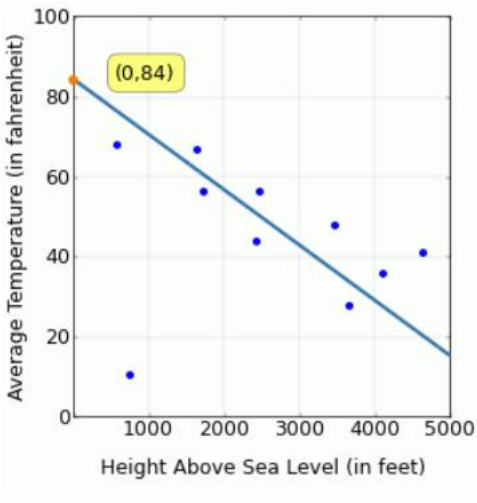
Grade 8: Practice Worksheet



Using the two points, select the line of best fit that best explains the graph above.

- $y = -2x + 20$
- $y = -x + 20$
- $y = 2x + 20$
- $y = x + 20$

10.

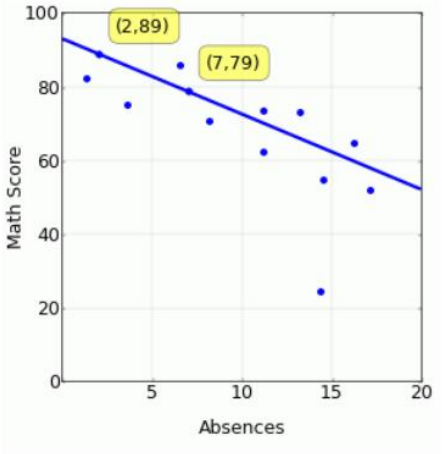


Using the line of best fit, predict the average temperature when height above sea level equals 0.

☐ degrees

11.

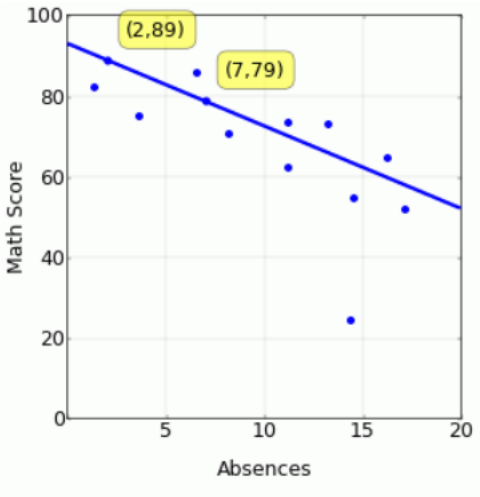
Grade 8: Practice Worksheet



Using the line of best fit, find the anticipated decrease of the math score if the number of absences were to increase by 10.

The math score would decrease by ☐ points.

12.

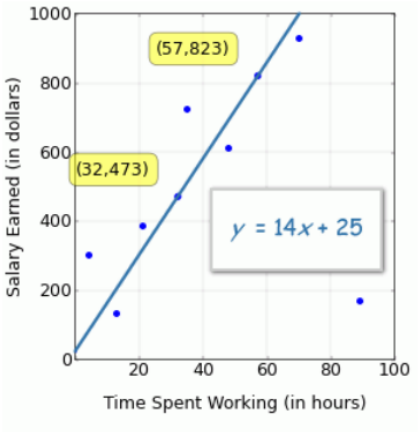


Approximate the equation of a line of best fit using the graph above.

- $y = -20x + 62$
- $y = -2x + 93$
- $y = 10x + 412$
- $y = \frac{3}{5}x + 30$

13.

Grade 8: Practice Worksheet



Using the data on this scatter plot and the equation of the line of best fit, predict the salary earned when a person works 5 hours.

☐ dollars

14.

Ownership of MP3 Player and Cell Phone
MP3 Player - Cell Phone
MP3 Player - Cell Phone
MP3 Player - Cell Phone
MP3 Player - No Cell Phone
No MP3 Player - Cell Phone
No MP3 Player - Cell Phone
No MP3 Plaayer - Cell Phone
No MP3 Player - No Cell Phone
No MP3 Player - No Cell Phone
No MP3 Player - No Cell Phone

Using the information above, construct a two-way table showing the relationship between having a MP3 player and a cell phone.

	MP3 Player	No MP3 Player
Cell Phone	☐	☐
No Cell Phone	☐	☐

15.

Grade 8: Practice Worksheet

	Single	Married
Have Kids	3	12
No Kids	13	2

Is there an association between marriage and having kids?

- Yes
- No

16.

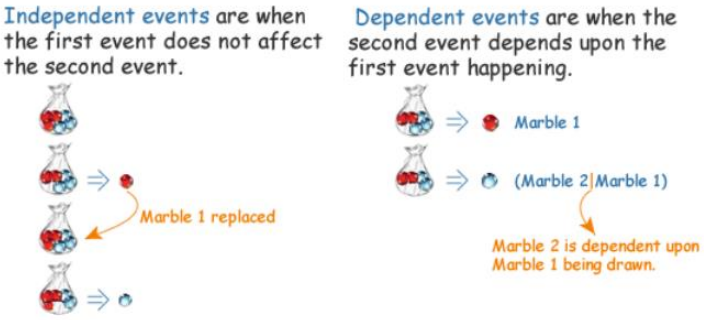
	Do Chores	Do Not Do Chores
Receive Allowance	22	5
No Allowance	4	23

Of the people who do chores, what percent receive an allowance?

Round to the tenths place.

[ ] %

17.



A bag contains 5 yellow, 4 green, and 2 blue marbles. One marble is drawn and immediately put back in the bag. Then a second marble is drawn. Identify whether the events are independent or dependent.

- Independent events
- Dependent events
- none of the above

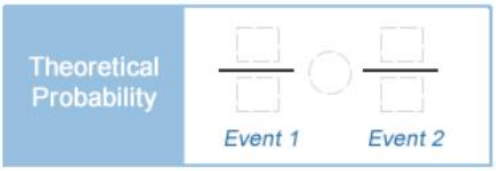
18.

Grade 8: Practice Worksheet

Set up an expression to show the probability of both events successfully occuring.

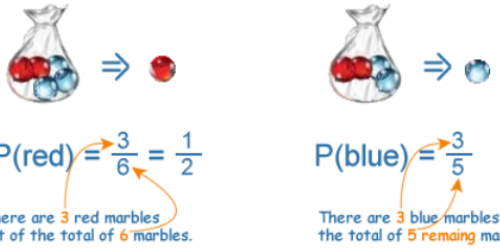
Event 1
Spinning a 7-sided spinner and the arrow landing on the number 5.

Event 2
Rolling a 6-sided die and an even number facing up.



19.

Find the probability of drawing the first marble and, without replacing that marble, drawing a second marble.



Two marbles are randomly drawn from a bag containing 3 purple, 1 blue, and 1 yellow marble. The first marble is blue and is not replaced. Find the probability of drawing a second marble that is purple.

P(purple|blue) = ☐

20.

A deck of cards has 3 blue, 4 black, and 6 purple cards. Draw 2 cards without replacing any cards. What is the probability of both cards being blue?

- ○ $5/156 = 3.2\%$
- ○ $1/26 = 3.8\%$
- ○ $3/52 = 57.7\%$
- ○ $6/169 = 3.6\%$
- ○ $5/13 = 38.4\%$

21.

Grade 8: Practice Worksheet

Mutually exclusive events cannot happen at the same time.

For example:

 Rolling a 1

 Rolling a 6

Mutually inclusive events can happen at the same time.

For example:

 Rolling a 6

 Rolling an even number

6 is also an even number

One card is drawn from a standard deck of 52 cards. When finding the probability of the event of drawing a red card and the probability of the event of drawing a black card, identify whether the events are mutually exclusive or mutually inclusive.

- Mutually exclusive events
- Mutually inclusive events

22.

A number cube numbered from 1 to 6 is rolled. What is the probability of the number cube showing a 2, a 6, or a 1? (Note: Percentages are rounded to the nearest tenth of a percent.)

- $1/2 = 50\%$
- $1/6 = 16.7\%$
- $3/5 = 60\%$
- $2/3 = 66.7\%$
- $1/3 = 33.3\%$

23.

Grade 8: Practice Worksheet

Mutually inclusive events are two ore more events that can happen at the same time.

$$P(A \text{ or } B) = P(A) + P(B) - P(A \text{ and } B)$$

Add the probability of each event, then subtract the outcomes that happen twice.

$$P(3 \text{ or odd}) = P(3) + P(\text{odd}) - P(3 \text{ and odd})$$

$$P(3 \text{ or odd}) = \frac{1}{6} + \frac{3}{6} - \frac{1}{6}$$

$$P(3 \text{ or odd}) = \frac{3}{6} = 50\%$$

At the pet store, 3 cats are brown with stripes, 2 cats are orange with stripes, and 5 cats are solid brown. What is the probability of a cat being brown or having stripes?

- $3/10 = 30\%$
- $1 = 100\%$
- $1/2 = 50\%$
- $1/5 = 20\%$
- $4/5 = 80\%$

24.

Independent events: First event does not affect the second event.

$$P(A \text{ and } B) = P(A) \cdot P(B)$$

Dependent events: First event affects the second event.

$$P(A \text{ and } B) = P(A) \cdot P(B|A)$$

Mutually exclusive events: Events that cannot happen at the same time.

$$P(A \text{ or } B) = P(A) + P(B)$$

Mutually inclusive events: Events that can happen at the same time.

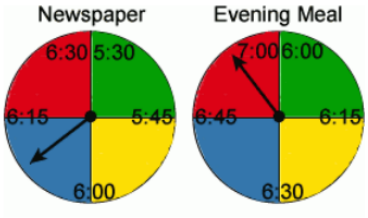
$$P(A \text{ or } B) = P(A) + P(B) - P(A \text{ and } B)$$

A drawer of socks contains 4 blue pairs, 6 white pairs, and 8 black pairs. Three pairs of socks are randomly selected and replaced. When finding the probability of all three pairs being white, identify the compound events.

- Independent events
- Dependent events
- Mutually exclusive events
- Mutually inclusive events

25.

Grade 8: Practice Worksheet



The evening newspaper is delivered at a random time between 5:30 and 6:30 pm. Dinner is at a random time between 6:00 and 7:00 pm. Develop a simulation to be used to determine the probability of the newspaper arriving before they start dinner.

- Spin the Newspaper spinner 30 times and record the results. Then find the experimental probability.
- Spin each spinner 30 times and record the results of each spin. Then find the experimental probability.
- Spin the Evening Meal spinner 30 times and record the results. Then find the experimental probability.
- Spin each spinner 30 times and only record the results when the newspaper arrives after dinner is started. Then find the experimental probability.
- There is not enough information to determine a simulation.

26.

A coin is tossed 2 times. Display all possible outcomes in an organized list.

- (H, H), (H, T), (T, T), (H, T)
- (H, T), (T, H), (T, T) (T, H)
- (T, T), (T, H), (H, T), (H, H)
- (H, H), (H, T), (T, H), (H, H)
- (H, H), (H, T), (T, H), (H, H)

27.

Grade 8: Practice Worksheet

Drag in the missing values to complete the table of possible outcomes.

A 6-sided die is rolled and a quarter is flipped.
Complete the table to show all of the possible outcomes.

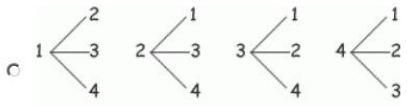
	1	2	3	4	5	6
Heads	(H,1)			(H,4)		(H,6)
Tails	(T,1)		(T,3)	(T,4)	(T,5)	

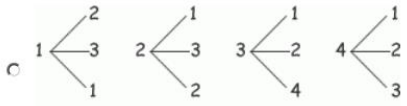
(T,2) (T,6) (H,2) (H,3)

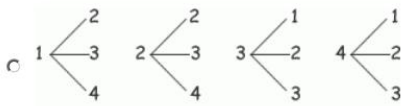
(H,5)

28.

You have a deck of four cards that are numbered 1 though 4. Two of the cards are drawn without replacement. Display all of the possible outcomes in a tree diagram.







29.

Grade 8: Practice Worksheet

Drag in the missing values to complete the table of possible outcomes.

A 7-sided spinner is spun and a quarter is flipped. Complete the table to show all of the possible outcomes.

	1	2	3	4	5	6	7
Heads	(H,1)	(H,2)		(H,4)	(H,5)		(H,7)
Tails		(T,2)	(T,3)	(T,4)	(T,5)		

(T,1) (T,6) (T,7) (H,3)

(H,6)

30.

A bus can contain a tourist, a business person, an artist, a musician, a medical professional, or a college student. A number cube with the numbers one through six is rolled 36 times. The number cube showed the number four 7 times. Determine the experimental probability of a person on the bus being a musician.

- P(musician) = $^{7}/_{36}$ = 19.4%
- P(musician) = $^{1}/_{9}$ = 11.1%
- P(musician) = $^{1}/_{7}$ = 14.3%
- P(musician) = $^{2}/_{13}$ = 15.4%
- P(musician) = $^{7}/_{9}$ = 77.8%