Dropdown menus

Name: _____ **Date:** _____

1. The following table shows the days of the week and the number of employee absences for that particular day.

Weekday	Monday	Tuesday	Wednesday	Thursday	Friday
Absences	39	34	32	37	58

Select a choice from each list to correctly complete the statement.

After testing the null hypothesis that there is no difference between the days and the number of absences we should [accept / reject] H_0 at the [0.005 / 0.01 / 0.05 / 0.10] level.

2. The parent graph of a parabola with equation $y = x^2$ goes through the following transformations:

- translated 3 units down
- translated 2 units right
- stretched vertically by a factor of 4

If the new equation is written in the form $y = a(x - b)^2 + c$, what are the values of a, b and c? Select the correct value from each menu.

$a =$ [−3 / 2 / 3 / 4] $b =$ [−3 / 2 / 3 / 4] $c =$ [−3 / 2 / 3 / 4]

3. For a particular quadratic equation, the discriminant is 100. Use the menus to describe the roots of the equation.

[0 / 1 / 2 / 3] [rational / irrational / imaginary] roots

4. Choose the correct symbol that makes each statement true.

3^2 [= / > / <] 2^3

0 [= / > / <] 3^0

$(-3)^3$ [= / > / <] $(-2)^5$

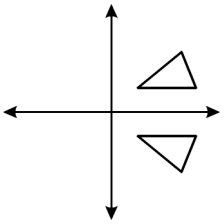
5. Select the correct choice that completes each statement.

In scientific notation, 35 thousand is written $3.5\times$ [10^3 / 10^4 / 10^5 / 10^6].

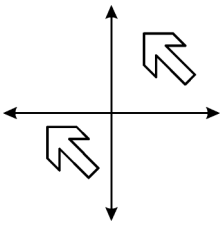
In scientific notation, 463 thousandths is written $4.63\times$ [10^{-5} / 10^{-3} / 10^{-1} / 10^5].

In standard notation, 3.892×10^6 is written [389,200 / 3,892,000 / 38,920,000 / 389,200,000].

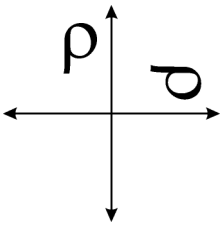
6. Use the menu next to each figure to tell what type of transformation is illustrated.



[Rotation / Reflection / Translation]



[Rotation / Reflection / Translation]

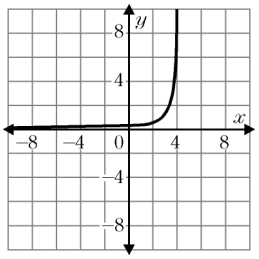


[Rotation / Reflection / Translation]

7. Select a choice from each list to correctly complete the statement.

The graph of $y = \sqrt{2x}$ is the image of $y = \sqrt{x}$ after [vertical / horizontal] [expansion / compression] by a factor of [0.5 / 2.0].

8. Consider the graph of the function $y = 3^{2(x-3)}$.



Mark a choice from each list to correctly complete the statement.

For the given function, the domain is [$x > 3$ / $x < 5$ / $x < 6$ / all real numbers] and the range is [$y < 0$ / $y > 0$ / $y > 1$ / all real numbers].

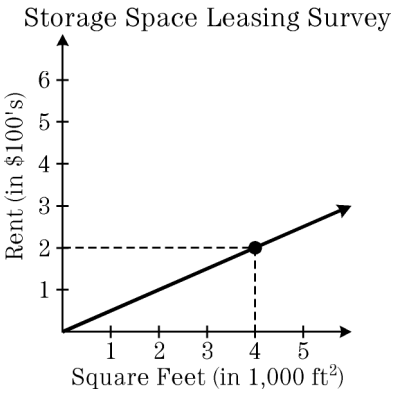
9. Students' grades on a statistics test are shown in the stem-and-leaf plot.

9	8, 8, 8, 6, 5, 4, 3
8	8, 8, 4, 3, 3, 2, 0
7	9, 8, 7, 7, 5, 5, 1
6	8, 4
5	6

Choose a number from each list to correctly complete the sentence.

The students' grades have a mean of [82 / 82.5 / 83.5 / 85], a median of [81.5 / 82 / 82.5 / 83], and a mode of [56 / 77 / 88 / 98].

10. The graph has a slope of $\frac{1}{2}$.



Select a choice from each list to correctly complete the sentence which describes the slope.

For every [1000 / 2000] ft^2, there is [an increase / a decrease] of $ [100 / 200].

11. If two dice—one red and one green—are cast and the uppermost numbers are observed. Let A, B, and C represent the following events.

A) The red die is even.

B) The green die is odd.

C) The red die is a 1.

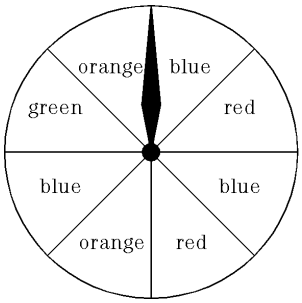
Select the choice that correctly completes each statement.

Events A and B are [dependent / independent / mutually exclusive].

Events B and C are [dependent / independent / mutually exclusive].

Events A and C are [dependent / independent / mutually exclusive].

12. Callum is playing a game using the spinner below.



Select the color that correctly completes each sentence.

He is most likely to spin [red / blue / green / orange].

He is least likely to spin [red / blue / green / orange].

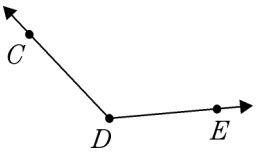
13. Choose an equation from each list to correctly complete the statement.

The points $\left(3, \frac{\pi}{6}\right)$, $\left(3\sqrt{3}, \frac{2\pi}{3}\right)$, and $(0, \pi)$ all lie on a polar graph.

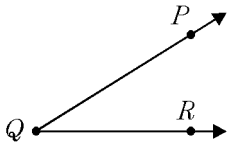
This set of points is represented by ___(1)___ in polar form and ___(2)___ in rectangular coordinates.

(1)	(2)
$r = 3\sin\theta$	$(x-3)^2 + y^2 = 9$
$r = 3\cos\theta$	$x^2 + (y-3)^2 = 9$
$r = 6\sin\theta$	$x^2 + (y-\frac{3}{2})^2 = \frac{9}{4}$
$r = 6\cos\theta$	$(x-\frac{3}{2})^2 + y^2 = \frac{9}{4}$

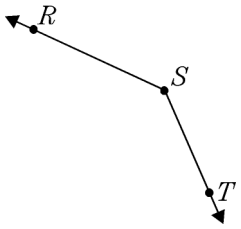
14. For each angle, select the correct classification from the menu next to it.



Right
Acute
Obtuse



Right
Acute
Obtuse



Right
Acute
Obtuse

15. Sam took 13 steps forward, 5 steps backward, 7 steps forward, and 11 steps backward.

Select a choice from each list that correctly completes the sentence.

Sam ended up

1 step
2 steps
4 steps

ahead of
behind

where he started.

Dropdown menus

16. Select the correct numbers and symbol to create an expression that is equivalent to 17.

22 10 9 12	+ − × ÷	8 9 2 4

17. The diameter (d) of a circle in terms of its area (A) is given by

$$d = 2\sqrt{\frac{A}{\pi}}.$$

Select a choice from each list to correctly complete the statement.

If the value of A is divided by 4, d is [increased / decreased / multiplied / divided] by [1 / 2 / 4 / 8].

18. The table shows the number of miles Liz and Sara rode their bikes during the week.

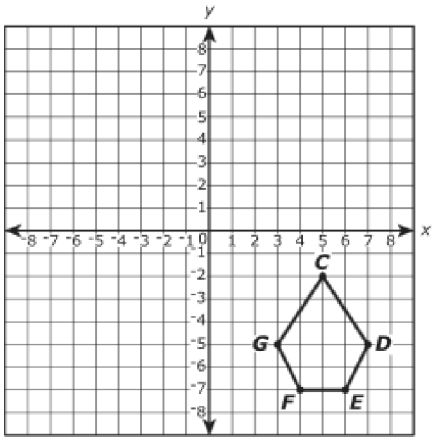
Number of Miles Each Day

	Monday	Tuesday	Wednesday	Thursday	Friday
Distance Liz rode	13	9	8	9	11
Distance Sara rode	5	5	15	9	6

Select from the drop-down menus to correctly complete each sentence.

During that week, [Liz / Sara] typically rode further each day because the [mean / median / range] of her data is greater. During that week [Liz / Sara] typically rode about the same number of miles each day because the [mean / median / range] of her data is smaller.

19. Pentagon *CDEFG* is shown on the coordinate plane.



Pentagon *CDEFG* is translated 7 units up and 5 units left, resulting in pentagon $C'D'E'F'G'$ (not shown).

Select from the drop-down menus to correctly complete each sentence.

The length of $\overline{FG}$ is [< > =] the length of $\overline{F'G'}$.

The perimeter of pentagon *CDEFG* is [< > =] the perimeter of pentagon $C'D'E'F'G'$.

20. Information about two linear functions is shown.

Function P

The input is multiplied by 2, then added to 3.

Function Q

x	y
−3	−4.5
5	7.5

Select from the drop-down menus to correctly complete each sentence.

The average rate of change of function *P* is [> = <] the average rate of change of function *Q*.

The *y*-intercept of function *P* is [> = <] the *y*-intercept of function *Q*.

21. The parabola $f(x) = (x-2)^2 + 1$ is graphed in the xy-coordinate plane.

Select from the drop-down menus to correctly complete each sentence.

Part A

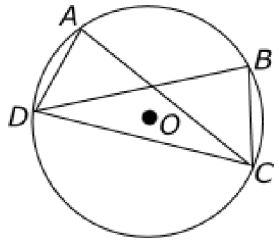
The vertex of the parabola is 2 units [up from / down from / right of / left of] the origin and 1 unit [up from / down from / right of / left of] the origin.

Part B

How does the function $f(x+3)$ compare to $f(x)$?

$f(x+3)$ has a [vertical / horizontal] shift 3 units [up from / down from / right of / left of] $f(x)$.

22. In circle O, points A, B, C, and D lie on the circle; $\overset{\frown}{AD}$ is congruent to $\overset{\frown}{BC}$; and the measure of $\overset{\frown}{AB}$ is twice the measure of $\overset{\frown}{BC}$.



Select from the drop-down menus to correctly complete the statement.

Part A

The measure of $\angle ACD$ is [a third / half / equal to / twice / three times] the measure of $\angle ADC$.

Part B

The measure of $\angle ADC$ is [a third / half / equal to / twice / three times] the measure of $\angle BCD$.

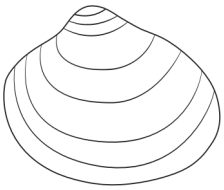
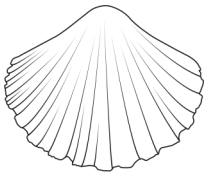
23. Complete the statement about the equation $9x - 4y = -18$.

The graph of the equation contains the point ___(1)___ which is ___(2)___ to the equation.

(1)	(2)
$(0, -18)$	one of two possible solutions
$(-4, -4.5)$	the only possible solution
$(9, -4)$	one of many possible solutions

24. Use the information provided and the table below to answer the questions.

Delia likes to collect seashells on the beach. She takes the best shells home, cleans them, and puts them in special cases. The table shows the number of shells she has collected.

Delia's Seashells		
Type	What It Looks Like	Number
Clam		38
Scallop		105
Whelk		63

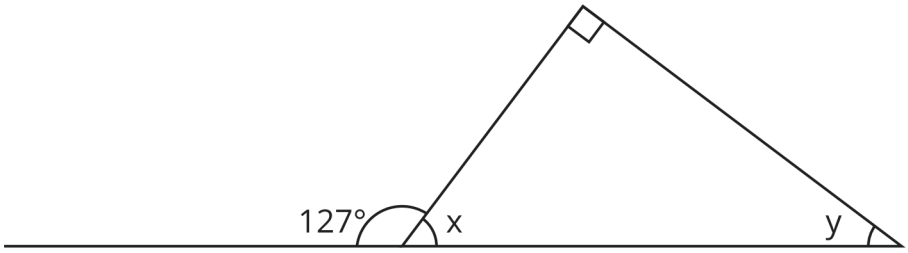
Over 3 days, Delia sells 12 of her best shells for \$5 per shell. Write an equation to find how much money she earned.

___ ___ ___ = ___

3 5 12	+ − × ÷	3 5 12	7 15 17 60

Dropdown menus

25. A right triangle is shown.



In the triangle, $x =$ [53 degrees / 127 degrees / 233 degrees] and $y =$ [37 degrees / 53 degrees / 127 degrees / 143 degrees].

26. Select the correct symbol that makes each comparison statement true.

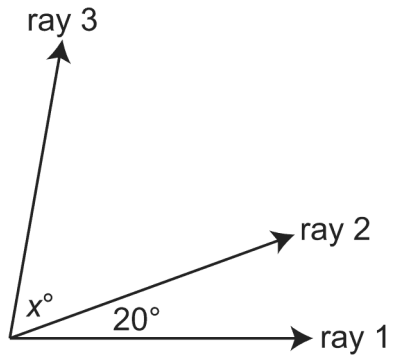
$\frac{4}{5}$ [> / < / =] $\frac{9}{10}$

$\frac{3}{4}$ [> / < / =] $\frac{5}{12}$

27. Select the options that correctly complete the sentence.

The value -5 [< / > / =] -9 because -9 is located to the [right / left] of -5 on the number line.

28. An angle is shown.

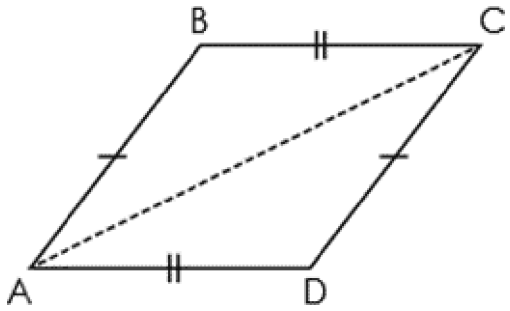


The measure of the angle formed by ray 1 and ray 3 is 80°.

Use the numbers, variables, and symbols below the blank lines to make an equation that could be used to find the value of x.

___	___	___	=	___
0 20 80 x	+ − × ÷	0 20 80 x		0 20 80 x

29. In quadrilateral $ABCD$, $\overline{AB} \cong \overline{CD}$ and $\overline{BC} \cong \overline{AD}$, as shown.

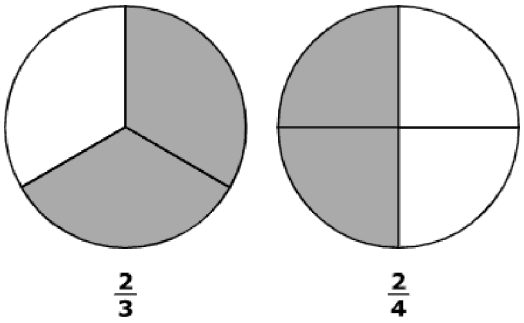


Select a term for each blank box to complete the proof showing that $\triangle ABC \cong \triangle CDA$.

By the ___(1)___ property of congruence, we can show that ___(2)___. Therefore, it can be established that $\triangle ABC \cong \triangle CDA$ by the ___(3)___ congruence theorem.

(1)	(2)	(3)
reflexive	$\overline{AB} \cong \overline{AD}$	ASA
symmetric	$\overline{AC} \cong \overline{CA}$	SAS
transitive	$\angle ABC \cong \angle CDA$	SSS
	$\angle BAC \cong \angle ACD$	

30. Two fraction models are shown.



Complete the sentences comparing $\frac{2}{3}$ and $\frac{2}{4}$ by selecting the correct answers from the drop-down menus.

Each part of the model of $\frac{2}{3}$ is [larger than / smaller than / the same size as] each part in the model of $\frac{2}{4}$.

There are 2 parts shaded in each model.

Therefore, $\frac{2}{3}$ [< / > / =] $\frac{2}{4}$.

31. An employee works 35 hours each week at an office.

- In her first year working at the office, the employee earned \$16.50 per hour.
- In her second year working at the office, the employee received an 8% raise.

Select from the drop-down menus to correctly complete the sentence about the employee's raise.

After the raise, the employee earned \$ [1.08 / 1.32 / 2.06] more per hour and earned \$ [37.80 / 46.20 / 72.01] more per week.

32. Circle 'is equal to' or 'is not equal to' to describe the relationship between these expressions.

a.	$7+1$	is equal to / is not equal to	$0+8$
b.	$6+3$	is equal to / is not equal to	$5+4$
c.	$1+4$	is equal to / is not equal to	$2+3$
d.	$2+5$	is equal to / is not equal to	$7+1$

33. Four teams participate in a chess tournament each year. Each team consists of one adult and one child. Each team records the difference in the number of wins by the adult and by the child from last year to this year, as shown in the table.

	Adult	**Child**
Team	**Difference in Wins Between Years**	**Difference in Wins Between Years**
Team A	-1	1
Team B	1	1
Team C	1	-2
Team D	-1	-2

Each team creates an ordered pair to show the total change in the number of wins from last year to this year.

- The x-coordinate of the ordered pair represents the change in the number of wins for the adult on the team.
- The y-coordinate of the ordered pair represents the change in the number of wins for the child on the team.

Each team's ordered pair ends up in one of the four quadrants. Find the name of each team under the quadrant that has that team's ordered pair.

Quadrant I	**Quadrant II**	**Quadrant III**	**Quadrant IV**
Team A Team B Team C Team D	Team A Team B Team C Team D	Team A Team B Team C Team D	Team A Team B Team C Team D