

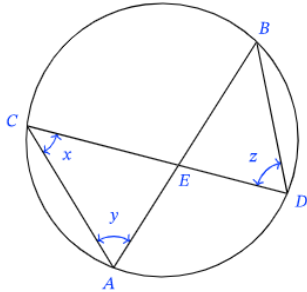
Semester 2 Final Review Worksheet

Name: _____ Per: _____

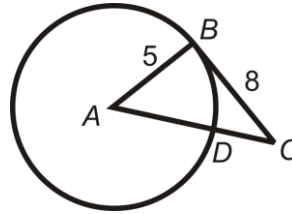
1) What is the y-intercept of $y = 7x^2 - 18x + 9$?

2) What is the diameter of a circle with the equation $x^2 + (y - 2)^2 = 121$?

3) If $\angle y = 75^\circ$, what is the $m\angle z$?



4) Given $\overline{BC}$ is tangent to circle A, what is the length of $\overline{AC}$?



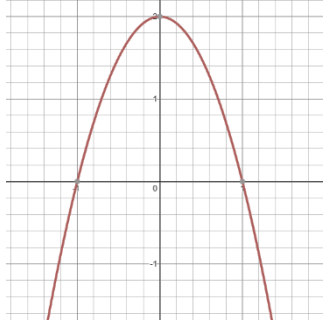
5) Solve by method of choice.
 $x^2 - 4x = 7$

6) How would you compare $g(x) = x^2$ and $h(x) = -7x^2$?

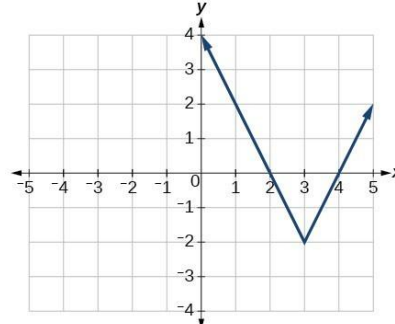
Which graph is wider: $g(x)$ or $h(x)$?

$g(x)$ opens: Up or down $h(x)$ opens: up or down

7) How many roots are there? What are the roots?



8) Write the equation of the function.



9) Solve $(x-34)(x+4)=0$

10) Solve $3x^2 - 14x + 8 = 0$ by factoring.

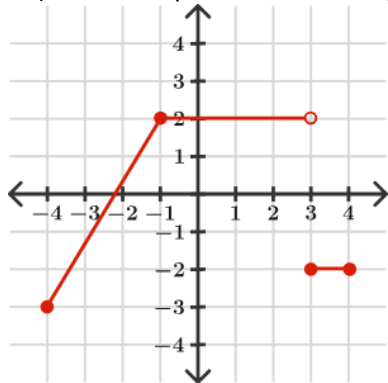
11) Use the quadratic formula to solve: $x^2 + 2x + 2 = 0$

12) Use the quadratic formula to solve: $x^2 - 3x + 5 = 0$

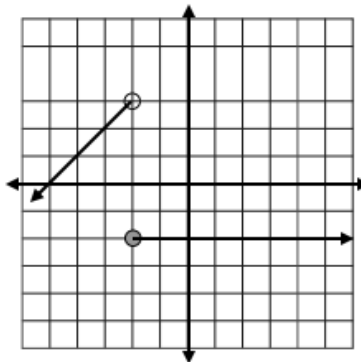
13) Use the quadratic formula to solve: $x^2+6x+9=0$

14) Use the quadratic formula to solve: $2x^2-8x-12=0$

15) Write the piecewise for the graph.



16) Write the piecewise for the graph.



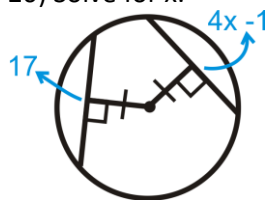
17) What is the inverse equation of the function $f(x) = 5x-20$?

18) Make a table for the inverse of the function below:

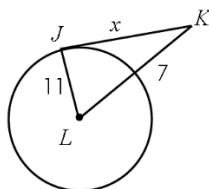
x	f(x)
12	-5
11	-6
10	-7
9	-8

19) What is the vertex of $y = -4(x - 5)^2 - 10$?

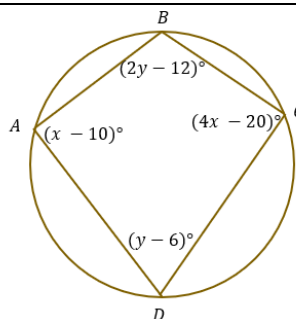
20) Solve for x.



21) JK is tangent to circle L below. If $m\angle K = (9x - 30)^\circ$ and $m\angle L = (12x + 15)^\circ$, what is x?

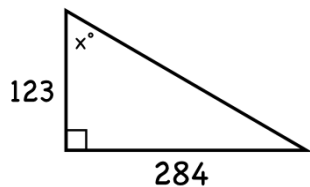


22) Solve for x & y.

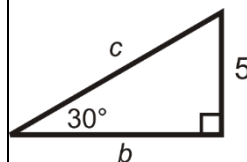


23) Assume you roll a standard dice three times. What is the probability of rolling 6 on the first roll, an even number on the second roll, and a number less than 5 on the last roll?

24) Solve for x.



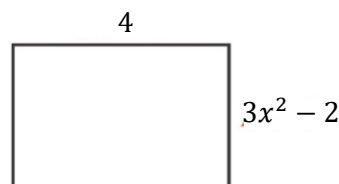
25) Solve for b and c.



26) You have a bag of skittles containing, 15 green skittles, 10 red skittles, 9 orange skittles, 10 yellow skittles and 11 purple skittles. You pick a purple out of the bag but put it back because, who likes purple? You reach in again and get yet another purple skittle. What was the probability of that happening?

27) Simplify the expression $\sqrt{192xy^7}$.

28) The area of the rectangle below is 40. Find the value of x.



29) A school offers two clubs, Star Wars and Pokémon. Out of 84 students in Star Wars, 41 are male. 38 males and twenty-two females are in Pokémon. There are no students who are in both clubs. Complete the two-way frequency table to organize the Star Wars and Pokémon data.

	Star Wars	Pokémon	Total
Male			
Female			
Total			

30) How do you know if two events are mutually exclusive?

31) I have 38 mismatched socks. Fifteen are black, ten are white, four are blue. What is the probability that I choose a white or blue sock?

32) Use the table below to answer the questions. Athletes only play one sport.

	Basketball	Swimming	Total
Freshman	18	22	40
JV	16	18	34
Varsity	12	20	32
Total	46	60	106

a) What percent of JV athletes are in basketball?

b) What percent of Freshman athletes are in swimming?

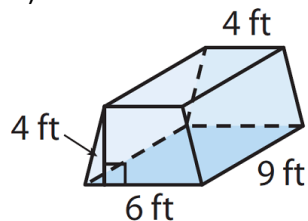
c) What percent of athletes are in varsity?

d) What percent of basketball athletes are there?

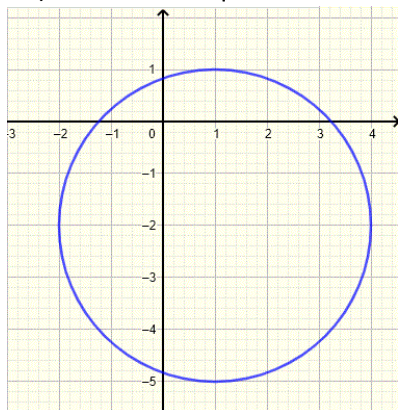
33) A standard deck of cards has 52 cards in it. What is the probability of drawing a 10 given it's a black card?

34) Given the area of a circle is 379.94 in^2 , what is the radius? Round the answer to the nearest whole number.

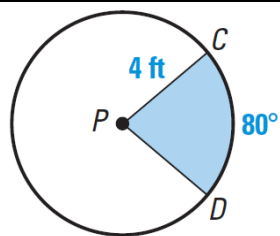
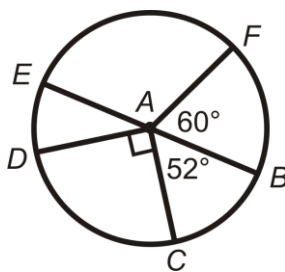
35) Find the volume:



36) What is the equation of the circle?

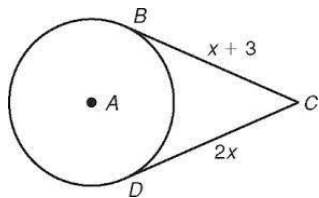


37) Find $m\widehat{FBD}$.

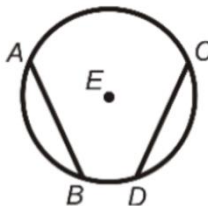


38) A) Find the arc length in terms of π B) Find the area of the shaded sector in terms of π

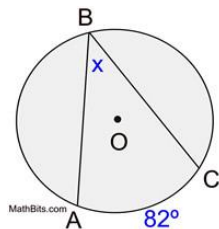
39) Solve for x



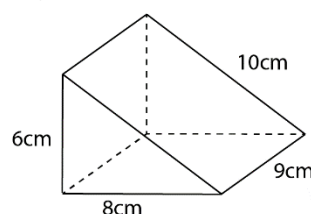
40) In the circle below the center is E and $\overline{AB} \cong \overline{CD}$. If $\widehat{AB} = 25x - 15$ and $\widehat{CD} = 20x + 5$, what is x?



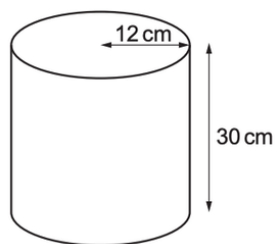
41) Solve for x.



42) Find the volume



43) Find the volume.



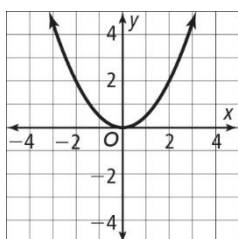
44) Find the volume.



45) Match each graph with its function.

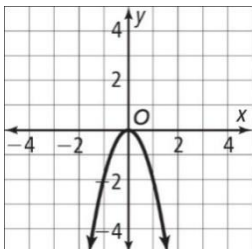
I. $f(x) = -2x^2$ _____

A.



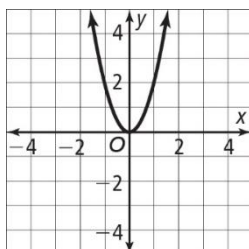
II. $g(x) = -x^2$ _____

B.



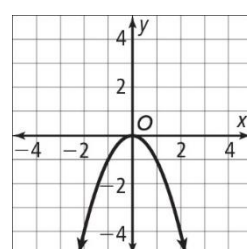
III. $h(x) = 0.5x^2$ _____

C.



IV. $j(x) = 2x^2$ _____

D.



46) What are the characteristics for the function

$$y = 3(x + 4)^2 - 2$$

Opens:

Vertex is a minimum or maximum?

AOS:

Vertex:

47) How many x-intercepts are there? What are they?

x	$F(x)$
-2	0
-1	-2
0	0
1	3
2	15

48) Solve for x. $5x^2 = 245$

49) Solve for x. $3x^2 - 15 = 93$

50) Convert $-4(x - 9)^2 + 5 = y$ to standard form.

51) Write the product of $(7+3i)(2-5i)$.