**AP Summer Packet- Answers**

**Complex Fractions**

1. or
2. \*note change the problem to the following:

**Function**

**Intercepts and Points of Intersection**



**Systems**

**Add**:

**Interval Notation**

|  |  |  |
| --- | --- | --- |
| Solution | Interval Notation | Graph |
|  |  |  |
|  |  |  |
|  |  |  |







Graph the following problems 30-33 in order to help you see the domain and range of each function.

1. Domain:

Range:

1. Domain:

Range:

1. Domain:

Range:

1. Domain:

Range:

For problems 36 and 37, prove

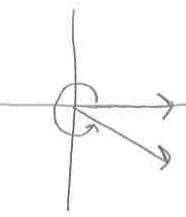
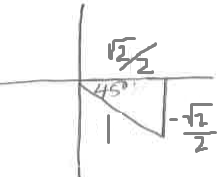
1. See above
2. See above

**Equation of a Line**

**Radian and Degree Measure**

1. a. 150° b. 144° c. 150.687°
2. a. b. c.

**Angles in Standard Position**

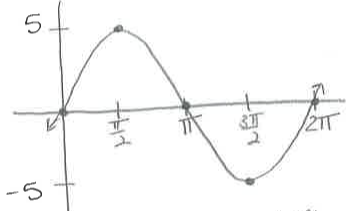
1. For a. – d. be sure to draw your angle from the positive x-axis. Up for positive, down for negative. 180 degrees or π is half of the circle. An example is below:
   1. 
2. For a. – d. follow directions from #48. Also be sure to include the length of the sides and hypotenuse. An example is below:
   1. 
3. Answers below
   1. 0
   2. 0
   3. -1
   4. 0
   5. 1
   6. -1

**Graphing Trig Functions**

Remember sin(x) goes through (0,0) and cos(x) goes through (1,0).

1. Find the period of the each of the graphs first by using the equation .
2. Break graph into fourths to find the max, zero, min, and zero.
3. Analyze to see if the graphs reflected or if the amplitude A is affected.
4. See if the graph is shifted left/right (inside with the x) and up/down (outside the x).

Example below:

1. 1. Period = for 1 cycle

2. max at ; zero at π; min at ; zero at 2π

3. Amplitude = 1

4. No shift left/right AND up/down

1. hint: What does the 2x do to the period? Remember the period is .
2. hint: What does the – in front do to the graph of cos? What does the inside with the x do to the graph of cos?
3. hint: What does the – 3 outside the graph of cos do to the graph?

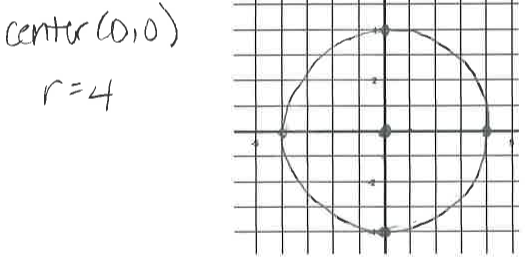
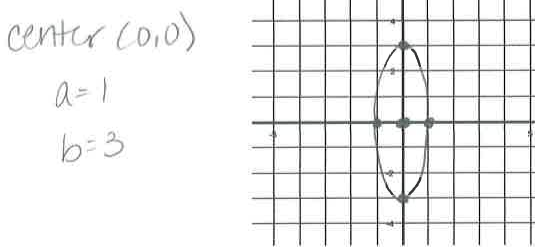
**Inverse Trig Functions**

1. π

\*Hint: #63-66 Draw a triangle with the sides and/or hyptoenuse using Soh Cah Toa. Use Pythagorean Thm. to find the missing side and/or hypotenuse.

**Circles and Ellipses**

For #67-70 find the center and radius of the circles and/or the center and the semi-major axis a and semi-minor axis b in order to draw the correct ellipse/circle. Two examples are given below

1. 
2. .

**Vertical Asymptotes**

**Horizontal Asymptotes**

1. Case 1: HA at
2. Case 2: HA at
3. Case 3: No HA (there is a slant/oblique asymptote)

**Law of Exponents**

1. hint: Factor the top and bottom. Cancel common factors.

**Law of Logarithms**

1. 25
2. ½
3. –x

**Solving Exponential and Logarithmic Equations**



**Factoring**

1. \*hint: factor by grouping – factor out
2. \* hint: factor using sum of cubes.

**Solve for the indicated variable**

**Solve for x**

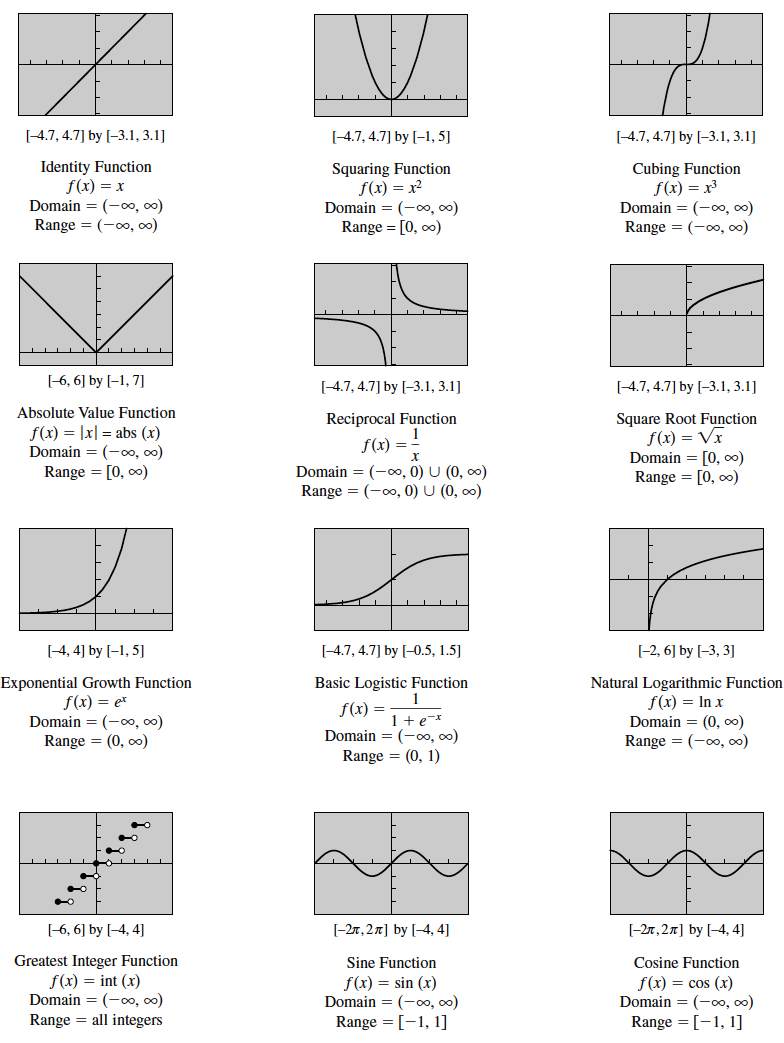
1. -3 or ½
2. -1/2

**Polynomial Division**

1. .

SUMMER WORKSHEET GRAPHS HINTS

Here are the graphs of the basic functions found in 1-10. Use a calculator or transformations to graph. I provided hints!



1. Sketch each of the following graphs of the parent function transformed.
   1. Shift Down 5
   2. Shift Up 3
   3. Shift Right 10
   4. Shift Left 8
   5. Vertical Stretch of 4
   6. Vertical Compression of ¼
   7. Reflection across the x axis
   8. Reflection across x-axis; shift left 3; shift up 6
   9. Shift left 4; Shift down 8
   10. Reflection across x-axis; shift left 1; shift up 4; vertical stretch 2
   11. Shift right 6; shift down 6; compress 1/3
   12. Reflection across x-axis; shift left 2; shift down 2; vertical stretch 3
2. Sketch each of the following graphs of the parent function transformed.
   1. Period = for 1 cycle; Amplitude = 1
   2. Period = ; Amplitude = 1; Shift down 2
   3. Period = ; Amplitude = 2
   4. Period = ; Amplitude = 2; Shift up 2
   5. Period = for 1 cycle; Amplitude = 1
   6. Period = ; Amplitude = 1
   7. Period = ; Amplitude = 2; Shift up 2
   8. Period = ; Amplitude = 2; Reflect over x-axis; Shift down 1
3. j
4. j
5. j
6. j
7. j
8. j