

SHOW YOUR WORK!

Summer Preparation for PRECALCULUS

This worksheet is a review of the objectives for Precalculus and is due on the first day back to school. It is to be done NEATLY and on a SEPARATE sheet of paper. Have a great summer!

In exercises 1 - 2 find the points that are symmetric to the given point (a) across the x-axis, (b) across the y-axis, and (c) across the origin.

1. (1, 4)

2. (2, -3)

3. Find equations for the vertical and horizontal lines through the point (1, 3).

In exercises 4 through 7, write an equation for the given line:

- 4. $P(2,3), m=2$
- 5. $P(2,3), m=0$
- 6. $P(1,0),$ no slope
- 7. $P(-1,2), m=-1/2$

8. Given the point, $P(6,0)$ and the line, $L: 2x-y=-2$

- A. Find an equation for the line through P parallel to L .
- B. Find an equation of the line through P perpendicular to L .

Graph each of the following. State the domain and range. (Use graph paper!)

- 9. $y = (x+1)^2 - 3$
- 10. $y = x^3$
- 11. $y = \sqrt{x}$
- 12. $y = e^x$
- 13. $y = \ln x$

14. $y = \frac{1}{x-2}$

15. $y = |x+1|$

15. Given: $f(x) = \frac{1}{x}; g(x) = x^2 - 4$

- A. Find the domain and range of f and g .
- B. Find the equations for $f+g, f^{-1}, f/g$.

17. Solve the system.

$$\begin{cases} 8x + y = 11 \\ x - y = 97 \end{cases}$$

Solve and Check. Show all work.

18) $82x+3 = 4(2)^{x+1}$

19) $3x^2 - 10x = 13x$ 20) $2x^2 = 3x + 7$

21) $3(x-5)^2 = 27$

22) $x^2 - 4x + 7 = 0$

23) $\frac{5x-2}{3x+1} = \frac{4x+1}{2x-3}$

Simplify:

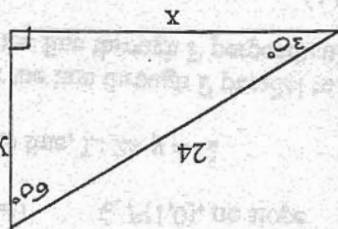
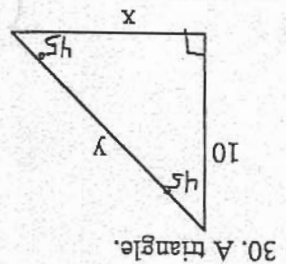
$$24)\sqrt{-16\sqrt{-169}}$$

$$25) \log_3 27$$

$$26) \left(\frac{1}{625}\right)^{\frac{4}{3}}$$

There is no # 27, 28, or 29!!

Determine the lengths of the missing sides of the special right triangles.

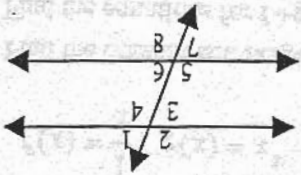


Factor completely.

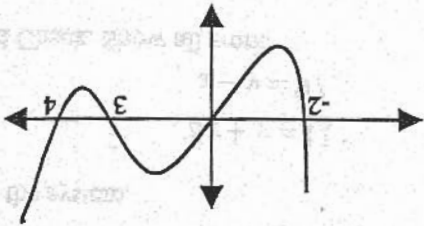
32. $4x^3 - 4x$ 33. $8x^2 + 2x - 15$ 34. $49 - 25x^2$ 35. $x^2 + 15x + 56$

36. Given two endpoints of a segment: A (2, -7) and B (-5, -4) Find the length and midpoint of the segment.

37. Given that the measure of angle 1 is 37° find the measure of all other angles.



38. Write an equation for the polynomial graphed at right.



39. Fill in blank.

a. The sum of the interior angles of a triangle is _____.

b. A $45^\circ-45^\circ-90^\circ$ triangle has sides with ratio measures _____.

c. A $30^\circ-60^\circ-90^\circ$ triangle has sides with ratio measures _____.

d. In a triangle, the largest angle is opposite the _____.

e. In a triangle, the smallest angle is opposite the _____.

f. In a triangle, if two angles are equal in measure then _____.