Name: _____   **Due: <u>Monday Sept. 9th, 2019</u>**

<u>PreCalculus (4502) Summer Review Packet</u>

The following packet contains material that has been presented in prior math classes. Students are expected to be proficient with all material covered in this packet to ensure proper understanding for the upcoming course. It is your responsibility to know the material. If there is a topic you are not familiar with, you should fine someone who can help you or search for resources as part of your summer preparation.

THIS PACKET IS TO BE COMPLETED IN THE FOLLOWING MANNER:

- **Work must be neat, clearly labeled and in consecutive order on a separate paper.**
- **Each problem, with work, counts toward the total grade.**
- **Each problem must have WORK! NO WORK = NO CREDIT**
- **THIS PACKET WITH ALL WORK IS DUE ON THE FIRST FULL DAY OF SCHOOL.**
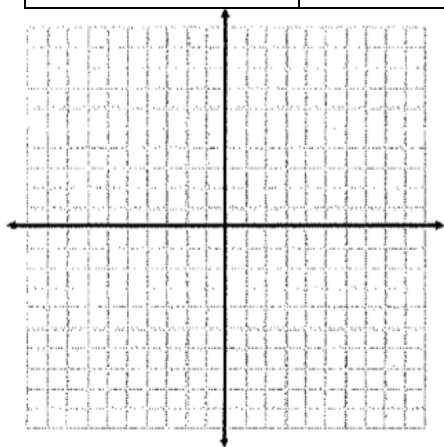- **All ANSWERS are to be recorded on the answer sheet provided and work is to be on a separate piece of paper.**

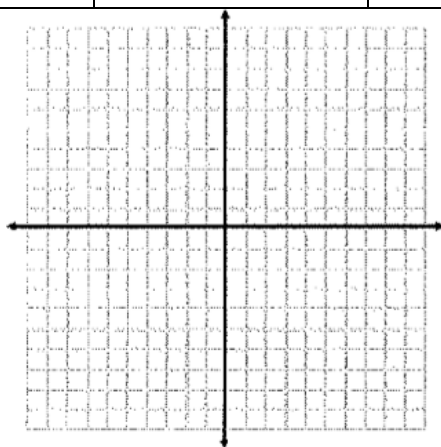**"On my honor, the answers and work provided are my own."**

_____

Student Signature

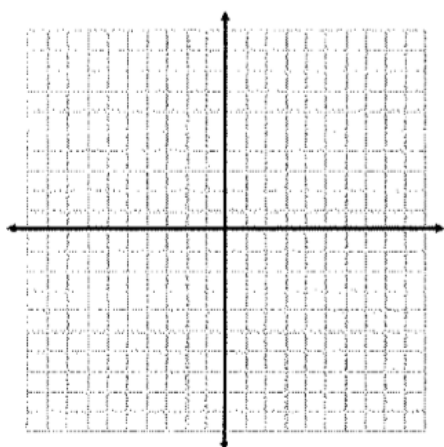| 1)	2)	3)	4)	5)
6)	7)	8)	9)	10)
11)	12)	13)	14)	15)
16)	17)	18)	19)	20)
21)	22)	23)	24)	25)
26)	27)	28)	29)	30)
31)	32)	33)	34)	35)
36)	37)	38)	**#39 - #44 use graph paper below**	45)
46)	47)	48)	49)	50)

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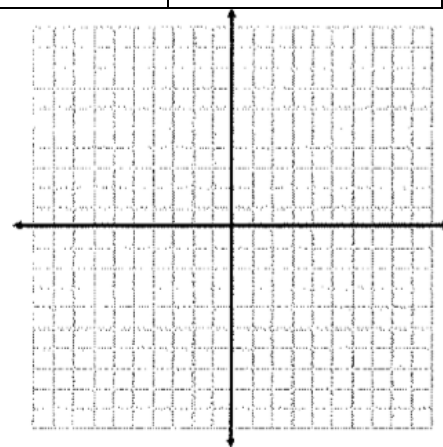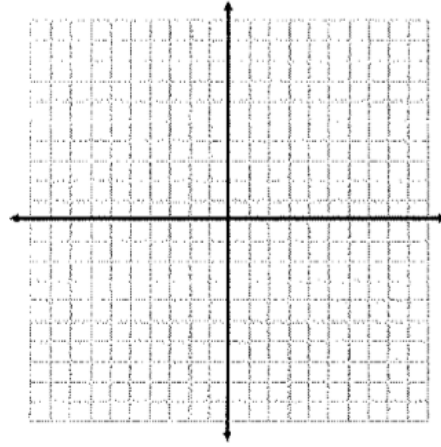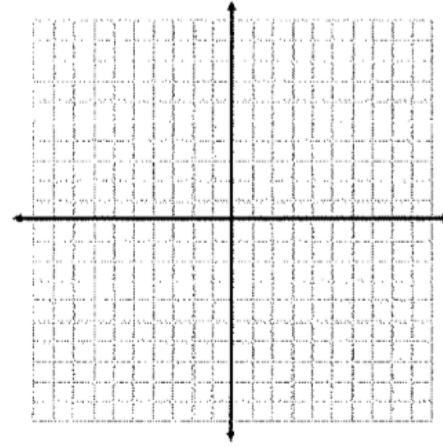
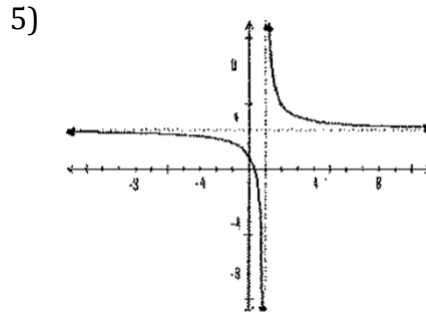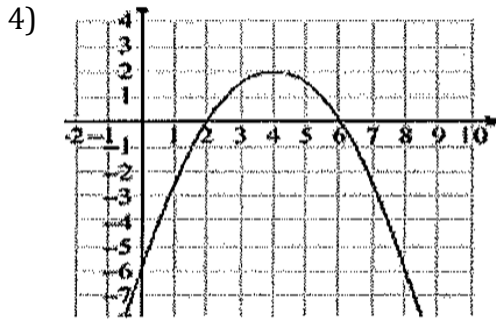Parent Function:_____   Parent Function:_____   Parent Function:_____

Determine the *domain and range* of the following relation or function.

1) $(1,2),(-3,8),(-9,6),(-1,5)$ 2) $y=\sqrt{x+1}-3$ 3) $y=x^4+3x^3-x^2-5x$

4)   5)

Solve each linear equation for the stated variable

6) Solve for *x*.   7) Solve for *m*.   8) Solve for t.

$5x+3(x-2)=4x+1$ $g=4cm-3m$ $2|t-5|+3=12$

Write the appropriate Linear Equation for each of the following.

9) Given $(-2,6)$ and $(5,2)$, write the equation in point-slope form.

10) Write the equation of a line that is perpendicular to $-5x-7y=-17$ and goes through $(6,-5)$.

Solve the following linear systems.

11) $3x+4y=12$ 12) $-x-5y-5z=2$
    $2x-3y=-9$ $4x-5y+4z=19$
                                                   $x+5y-z=-20$

Solve the quadratic equation by completing the square.

13) $x^2+10x-25=0$

Solve the quadratic equation using the quadratic formula.

14) $x^2-4=3x$

Solve the quadratic equation by factoring.

15) $27x^2+18x=0$ 16) $x^2+3x=10$

17) $x^2-11x+19=-5$ 18) $2x^2+20x+12=5x-x^2$

Simplify the following expression; assume no variable is equal to zero. Leave all exponents as positive whole numbers.

19) $\left(2x^4\right)^{-3}$

20) $\left(\dfrac{3}{x^{-3}}\right)^7$

21) $\dfrac{xy^9}{2y^2}\cdot\dfrac{-7y}{21x^{-5}}$

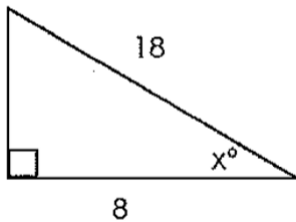**Perform the indicated operation and simplify.**

22) $\dfrac{x^2+x-6}{x^2-4}$

23) $\dfrac{3}{x+5}-\dfrac{x}{5}$

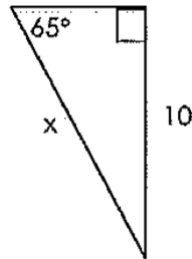24) $\dfrac{3x^2+7x-6}{9x^2-4}\cdot\dfrac{15x^2+4x-4}{9-x^2}$

25) For what values will make the function $\dfrac{5+x}{25-x^2}$ undefined?

Using right triangle trigonometry, determine the measure of the missing side or angle. Round your answers to the nearest hundredth.

26)

27)

Without a calculator, determine the exact value of each expression.

28) $\sin\dfrac{\pi}{2}$

29) $\cos 180^\circ$

30) $\tan\dfrac{2\pi}{3}$

Let $f(x)=2x-1$, $g(x)=3x$ **and** $h(x)=x^2+1$. **Compute the following:**

31) $f\left(g(-3)\right)$

32) $\left(f+g\right)(x)$

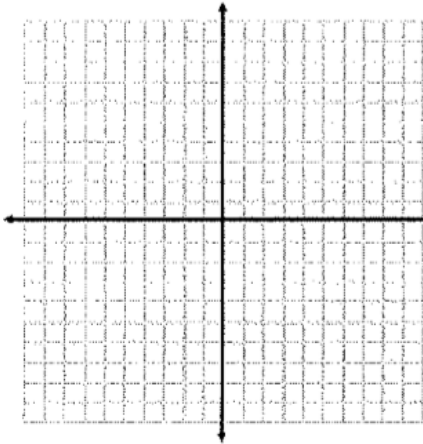33) $f(x)\cdot h(x)$

34) $f(x+1)$

35) $g(3a)$

36) $h(x-2)$

Find the inverse of each function.
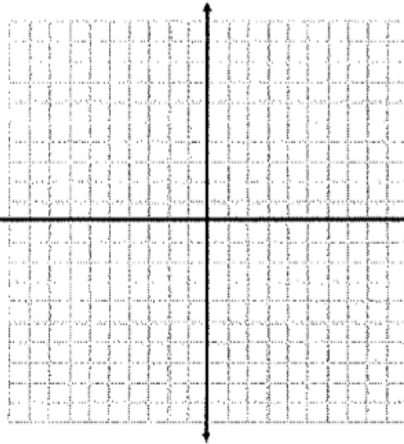
37) $g(x)=\dfrac{7x+18}{2}$

38) $h(x)=2x^3+3$

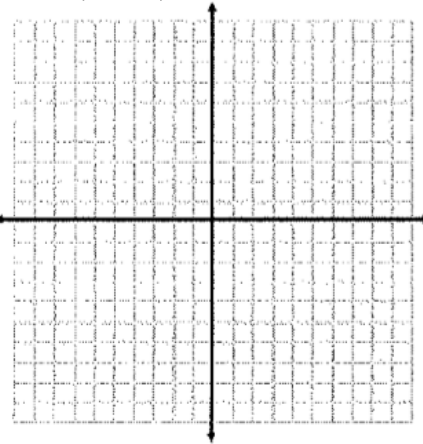**Graph the following equations and state the parent function.**

39) $y = -2x + 3$

40) $y = \sqrt[3]{x} + 1$

41) $y = |4x - 1| + 2$

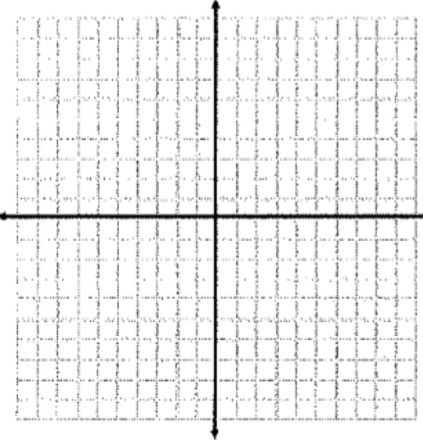Parent Function:_____   Parent Function:_____   Parent Function:_____

42) $y = 2x^3 + 4$

43) $y = 3x^2 + 5x + 1$
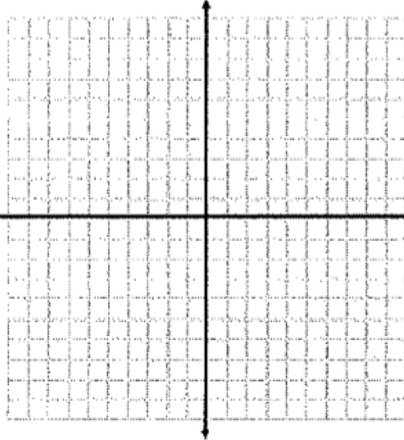
44) $(x+3)^2 + (y-1)^2 = 4$
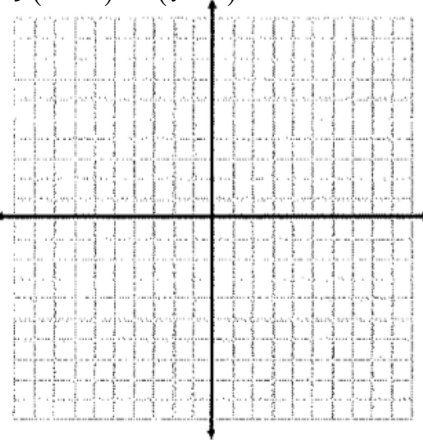
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For each of the following, divide using long division or synthetic division

45) $(x^2 - 7x - 11) \div (x - 8)$

46) $(50k^3 + 10k^2 - 35k - 7) \div (5k - 4)$

Solve each of the following equations. Round to the nearest tenth if necessary

47) $3^{x-2} = 9$

48) $4^{-2x} = 64^{-x}$

49) $3^{x+2} = 10$

50) $\log_4 (3x - 2) = 2$