Part I. Show all work for possible partial credit. 2 points each

1) $\dfrac{\dfrac{-12}{3}}{5} =$

2) $\dfrac{-3}{4} \div \left(-\dfrac{17}{8}\right) =$

3) $-\left|-3-5\right| =$

4) $\dfrac{1}{3} + 2 - \dfrac{5}{2} =$

5) $16 \div 4 - 2 \cdot 3^2 =$

6) -3^2

7) $\dfrac{21}{2} \times \dfrac{4}{3} =$

8) 4^0

9) $12.9 + 1.01 =$

10) $21 \cdot 0 \cdot (514) =$

ANSWERS

1)_____

2)_____

3)_____

4)_____

5)_____

6)_____

7)_____

8)_____

9)_____

10)_____

Part II. Show all work for possible partial credit. 5 points each.

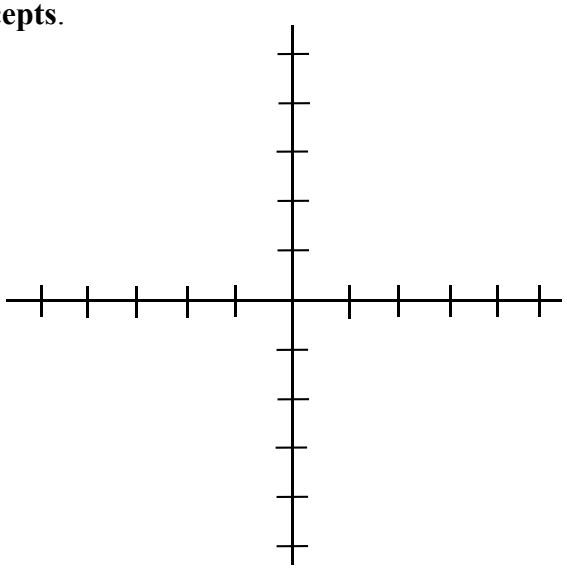
11. Solve the equation for x. $-5x = 3(2 + 3x) - 6$

12. Solve the inequality. Give the solution set in both interval and graph forms.

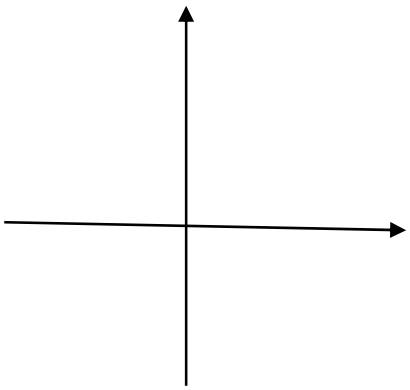
$-\frac{2}{3}x \geq 6$ Graph solution: 

Interval notation

13. Graph the given line. **Label all intercepts**.
$-2x + 4y = 8$



14. Graph the line that has a *y*-intercept of (0,4) and a slope of $\frac{2}{3}$.



15. Find the product and simplify: $(x-\sqrt{y})(x+\sqrt{y})$

16. **Simplify** the expression: $\frac{1}{3}-\frac{5}{6x}+\left(\frac{2}{3x}\right)$

17. Simplify using **only positive exponents**. Assume all variables represent positive real numbers.

$$\frac{2x^5 \cdot 3^{-2}}{(x^{-2})^3}$$

18. Factor completely, write "prime" if it cannot factor: $3y^2 - 11y - 20$.

Factor **completely, write prime if it can't factor**:

19. $2x^3 - 50x$

20. $2a^3 + a^2 - 14a - 7$

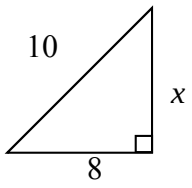
21. Express and simplify in lowest terms: $\dfrac{x - 3}{x^2 - x + 6}$

22. Solve: $x^2 - 64 = 0$.

23. Find the slope of the line through the points $(2,-1)$ and $(-3,4)$.

24. Given $C = \dfrac{5}{9}(F - 32)$, solve for F.

25. For the given right triangle, find x. You must set up and solve an equation for credit.



Part III. Show all work for possible partial credit. 7 points each

26. Solve for x. $\dfrac{3x+2}{3}+\dfrac{x+4}{4}=-3$

27. Multiply and **simplify**: $\dfrac{4x-20}{5x}\cdot\dfrac{4x^4}{10-2x}$

28. Choose a domain for each function. Write the correct number in the answer blank.

a) $f(x)=\dfrac{4}{x-3}$ Answer _____

b) $g(x)=\sqrt{x}-3$ Answer _____

c) $h(x)=\sqrt{x-3}$ Answer _____

1) $(-\infty,\infty)$
2) $(0,\infty)$
3) $(9,\infty)$
4) $[3,\infty)$
5) $(-\infty,3)\cup(3,\infty)$
6) Not listed.

29. Find the equation of the line passing through $(2,-1)$ with slope -5.

The point slope form is $\Rightarrow$ $(y-$ ___$)=$ ____$(x-$ ___$)$.

The slope intercept form is $\Rightarrow$ $y=$___ x +___ .

30. For the following pair of functions, find the following. Be sure to express in simplest form.

$f(x)=4x+3$ and $g(x)=-2x^2+2x+6$

(a) $(f+g)(2)=$ (b) $(f-g)(x)=$

31. Perform the indicated operation. **Reduce** to lowest terms.

$$\frac{3}{x-2}-\frac{4}{x^2-2x}$$

32. Express the radical in simplified form. Assume that all variables represent positive real numbers.

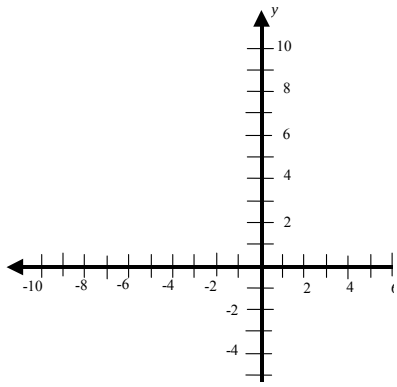
a) $\sqrt{\frac{25a^6}{81b^{10}}}$

b) $2\sqrt{24}+\sqrt{54}$

33. Graph the function by creating a table of ordered pairs:

$f(x)=x^2+1$

x	y
-3	
-2	
0	
2	
3	



34. Complete the following table.

Inequality(set)	Interval
a) $x \geq 5$	_____
b) _____	$(-\infty,2)$
c) $-3 < x \leq 1$	_____
d) $x \neq 2$	_____

35. Solve for x. $x^3 - 14x^2 + 45x = 0$

36. Solve for p *and check.* $\sqrt{p} = p - 2$

37. Given $f(x) = x^2 - 3x + 2$, evaluate

a) $f(-2)$ b) $f(3d)$

Part IV. Choose 3 of the following 5 problems. You must indicate the 3 problems to be graded. If not, we will grade the first three. Show all work for possible partial credit. 7 points each.

☐ 38. Solve for *x and* simplify answers. $x^2 - 3x = 6$

Grade

☐ 39. Factor completely: $1 - x^8$

Grade

☐ 40. How many gallons of 30% antifreeze must be mixed with 10 gallons of 70% solution to get a 50% solution?

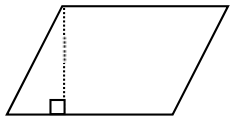
Grade

☐ Grade

41. The base of a parallelogram is 5 feet more than the height. If the area of the parallelogram is 36 ft.^{2}, what are the measures of the base and height?

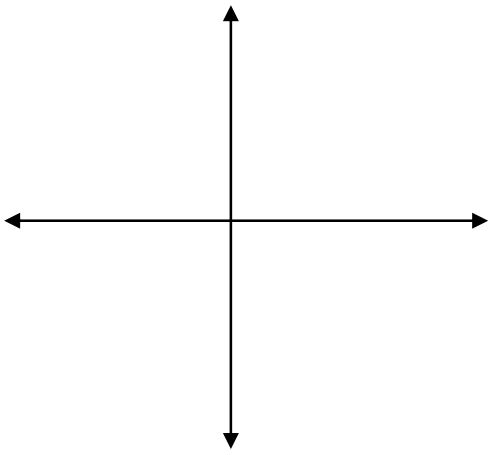
SET UP AN SOLVE AN EQUATION FOR CREDIT!

area of parallelogram = base times height



☐ Grade

42. Graph the function $f(x) = \frac{2}{x}$. Label at least 5 pts.



BE SURE YOU HAVE MARKED THE 3 PROBLEMS TO BE GRADED.