

Name \_\_\_\_\_

Date \_\_\_\_\_

Graph the circle and label the center and radius.

1.  $(x+3)^2 + (y-1)^2 = 81$

2. Find the equation of the circle with center (1, 4) and radius
- $r = 4$
- .

Solve.

3.  $10 = \frac{a-4}{5} + \frac{a+2}{2}$

4.  $\frac{2}{8-d} = \frac{5}{3d} - \frac{7}{8-d}$

5.  $\frac{5}{8h+7} = \frac{1}{4h-3}$

6.  $\frac{2x-1}{2x+3} = \frac{3x-2}{3x+5}$

7.  $7w^2 - 8w + 1 = 0$

8. Find the distance between (-4, 2) and (6, -3).

9. Find the midpoint of the segment whose endpoints are (15, 10) and (10, 8).

Write the equation of the line in slope/intercept form.

10. contains (4, 6) and (-2, 3)

11. What are the
- $x$
- and
- $y$
- intercepts of the line
- $4x - 5y - 20 = 0$
- ?

Write the equation of the line in standard form.

12. contains (-1, 7) and (3, -9)

Write the equation of the line.

13. contains (6, -4) and is perpendicular to
- $4y - 7x + 1 = 0$

14. passes through (-5, 2) and is parallel to
- $2x - 3y = 4$

Solve.

15.  $|5t - 10| \geq 15$

16.  $|-8 + m| \leq 6$

Solve each inequality and graph.

17.  $x^2 - x - 2 \geq 0$

18.  $p^3 - 49p \leq 0$

19. Solve:  $(x-2)^2 = 14$

20. Solve
- $3x^2 - 5x - 1 = 0$
- using the Quadratic Formula.

21. Solve:  $\sqrt{7x-3} + 3 = 2x$

22. Solve for  $x$ :  $|4 - 3x| < 10$

Solve.

23.  $\sqrt{v-2} + 4 = v$

24.  $\frac{2b+3}{b-3} < 1$

25.  $\frac{x-1}{3x-8} \leq 2$

26.  $44 = (r-3)^2$

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Ch P review 8/28/2005

Answer List

- |   |   |   |
|---|---|---|
| 1. $(-3, 1), r = 9$   | 2. $(x-1)^2 + (y-4)^2 = 16$                                       | 3. 14   |
| 4. $\frac{5}{4} \quad d \neq 0, 8$                              | 5. $\frac{11}{8} \quad h \neq -\frac{7}{8}, \frac{3}{4}$          | 6. $-\frac{1}{2} \quad x \neq -\frac{3}{2}, -\frac{5}{3}$ |
| 7. $1, \frac{1}{7}$   | 8. $5\sqrt{5}$  | 9. $(\frac{25}{2}, 9)$                                    |
| 10. $y = \frac{1}{2}x + 4$                                      | 11. $y$ -int $(0, 4)$ $x$ -int $(5, 0)$                           | 12. $4x + 3y = 3$   |
| 13. $4x + 7y = 4 \quad / \quad y = -\frac{4}{7}x - \frac{4}{7}$ | 14. $2x - 3y = -16 \quad / \quad y = \frac{2}{3}x + \frac{16}{3}$ | 15. $(-\infty, -1] \cup [5, \infty)$                      |
| 16. $[2, 14]$   | 17. $(-\infty, -1] \cup [2, \infty)$                              | 18. $[-\infty, -7] \cup [0, 7]$                           |
| 19. $2 \pm \sqrt{14}$   | 20. $\frac{5 \pm \sqrt{37}}{6}$                                   | 21. 4   |
| 22. $(-2, \frac{14}{3})$  | 23. 6   | 24. $(-6, 3)$   |
| 25. $(-\infty, \frac{8}{3}) \cup [3, \infty)$                   | 26. $3 \pm 2\sqrt{11}$  |   |

Catalog List

Math Analysis  
P.4-P.5

Name \_\_\_\_\_  
Date \_\_\_\_\_ Period \_\_\_\_\_

Solve. Show work.

1.  $\frac{3x}{5} + x = \frac{2}{3}$

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

3.  $-3x^2 + 4x + 6 = 0$

4. Solve and graph the solution.  
 $-2 < 3x + 1 \leq 7$

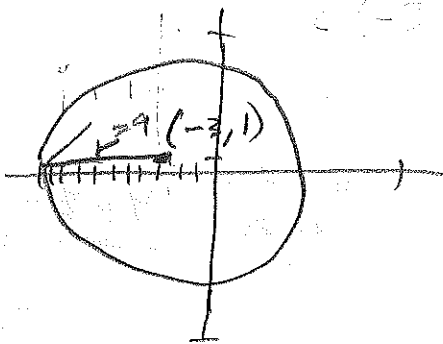
5. Solve and graph the solution.  
 $|3x-1| > 9$

6. Solve.  $2x^3 \leq 4x^4$

7. Solve.  $\frac{2}{x+2} \geq \frac{3}{x-1}$

# HAlg chp review

#1



#2.  $(x-1)^2 + (y-4)^2 = 16$

#3.  $\frac{10}{1} = \frac{a-4}{5} + \frac{a+2}{2}$

$$\frac{2 \cdot 5 \cdot 10}{1} = \frac{2 \cdot 5 \cdot (a-4)}{5} + \frac{2 \cdot 5 \cdot (a+2)}{2}$$

$$100 = 2a - 8 + 5a + 10$$

$$100 = 7a + 2$$

$$98 = 7a$$

$$a = \frac{98}{7} = \boxed{14}$$

#4.  $\frac{2}{8-d} = \frac{5}{3d} - \frac{7}{8-d}$

$$\frac{2(3d)(8-d)}{(8-d)} = \frac{5(3d)(8-d)}{3d} - \frac{7(3d)(8-d)}{(8-d)}$$

$$6d = 5(8-d) - 7(3d)$$

$$6d = 40 - 5d - 21d$$

$$6d = 40 - 26d$$

$$32d = 40$$

$$d = \frac{40}{32} = \boxed{\frac{5}{4}}$$

$$(d \neq 8, 0)$$

#5.  $\frac{5}{8h+7} = \frac{1}{4h-3}$

$$8h+7 = 20h-15$$

$$22 = 12h$$

$$\frac{22}{12} = h$$

$$h = \boxed{\frac{11}{6}}$$

$$(h \neq \frac{7}{8}, \frac{3}{4})$$

#6.  $\frac{2x-1}{2x+3} = \frac{3x-2}{3x+5}$

$$(2x+3)(3x-2) = (2x-1)(3x+5)$$

$$6x^2 - 4x + 9x - 6 = 6x^2 + 10x - 3x - 5$$

$$5x - 6 = 7x - 5$$

$$-1 = 2x$$

$$x = -\frac{1}{2} \quad (x \neq -\frac{3}{2}, \frac{5}{2})$$

#7.  $7w^2 - 8w + 1 = 0$

$$\left(\frac{7w-7}{7}\right)\left(\frac{w-1}{1}\right) \quad \begin{array}{r} 7 \overline{) -8} \\ \underline{-7} \phantom{-1} \\ -1 \phantom{-1} \end{array}$$

$$(w-1)(7w-1) = 0$$

$$\boxed{w=1, w=\frac{1}{7}}$$

#8.

$$d = \sqrt{(6+4)^2 + (-3-2)^2}$$

$$= \sqrt{100 + 25}$$

$$= \sqrt{125} = \sqrt{25} \sqrt{5} = \boxed{5\sqrt{5}}$$

$$\#9, \text{midpt} = \left( \frac{15+10}{2}, \frac{10+8}{2} \right) = \left( \frac{25}{2}, 9 \right)$$

$$\#10, m = \frac{3-6}{-2-4} = \frac{-3}{-6} = \frac{1}{2}$$

$$y = \frac{1}{2}x + b$$

$$6 = \frac{1}{2}(4) + b$$

$$6 = 2 + b$$

$$4 = b$$

$$y = \frac{1}{2}x + 4$$

$$\#11, (5,0) (0,-4)$$

$$\#12, m = \frac{7+9}{-1-3} = \frac{16}{-4} = -4$$

$$-4 = \frac{y+9}{x-3}$$

$$-4x+12 = y+9$$

$$4x-12 = -y-9$$

$$4x+3y = 3$$

$$\#13, -4y = -7x + 1$$

$$4y = 7x - 1$$

$$y = \frac{7}{4}x - \frac{1}{4}$$

$$y = \frac{7}{4}x + b$$

$$-4 = \frac{7}{4}(6) + b$$

$$-28 = -24 + 7b$$

$$-4 = 7b$$

$$\frac{-4}{7} = b$$

$$y = \frac{7}{4}x - \frac{4}{7}$$

$$\#14,$$

$$3y = 2x - 4$$

$$y = \frac{2}{3}x - \frac{4}{3}$$

$$y = \frac{2}{3}x + b$$

$$2 = \frac{2}{3}(-5) + b$$

$$6 = -10 + 3b$$

$$16 = 3b$$

$$\frac{16}{3} = b$$

$$y = \frac{2}{3}x + \frac{16}{3}$$

$$\#15, |5t-10| \geq 15$$

$$5t-10 \geq 15$$

$$5t-10 \leq -15$$

$$5t \geq 25$$

$$5t \leq -5$$

$$t \geq 5$$

$$t \leq -1$$



$$(-\infty, -1] \cup [5, \infty)$$

$$\#16, |1-8+m| \leq 6$$

$$-6 \leq -8+m \leq 6$$

$$+8$$

$$+8$$

$$+8$$

$$2 \leq m \leq 14$$

$$[2, 14]$$



$$7. x^2 - x - 2 \geq 0$$

$$(x+1)(x-2) \geq 0$$

crit #s: -1, 2

$(-\infty, -1)$	-2	$(-)(-) = +$	✓
$(-1, 2)$	0	$(+)(-) = -$	
$(2, \infty)$	3	$(+)(+) = +$	✓

$$\boxed{(-\infty, -1] \cup [2, \infty)}$$

$$\#18. p^3 - 49p \leq 0$$

$$p(p^2 - 49) \leq 0$$

$$p(p+7)(p-7) \leq 0$$

crit #s: -7, 0, 7

$(-\infty, -7)$	-8	$(-)(-)(-) = -$	✓
$(-7, 0)$	-1	$(-)(+)(-) = +$	
$(0, 7)$	1	$(+)(+)(-) = -$	✓
$(7, \infty)$	8	$(+)(+)(+) = +$	

$$\boxed{(-\infty, -7] \cup [0, 7]}$$

$$\#19. (x-2)^2 = 14$$

$$x-2 = \pm\sqrt{14}$$

$$\boxed{x = 2 \pm \sqrt{14}}$$

$$\#20. 3x^2 - 5x - 1 = 0$$

$$x = \frac{5 \pm \sqrt{25 + 12}}{6} = \boxed{\frac{5 \pm \sqrt{37}}{6}}$$

$$\#21. \sqrt{7x-3} + 3 = 2x$$

$$\sqrt{7x-3} = 2x-3$$

$$7x-3 = (2x-3)^2$$

$$7x-3 = 4x^2 - 12x + 9$$

$$0 = 4x^2 - 19x + 12$$

$$(4x-16)(4x-3)$$

$$0 = (x-4)(4x-3)$$

$$x=4 \Rightarrow$$

$$\boxed{x=4}$$

$$4x-3=0$$

$$4x=3$$

$$x = \frac{3}{4}$$

extraneous

$$\#22. |4-3x| < 10$$

$$-10 < 4-3x < 10$$

$$\frac{-14}{-3} < \frac{-3x}{-3} < \frac{6}{-3}$$

$$\frac{14}{3} > x > -2$$

$$\boxed{(-2, \frac{14}{3})}$$

$$\#23. \sqrt{v-2} + v = 5$$

$$\sqrt{v-2} = 5-v$$

$$v-2 = (5-v)^2 = v^2 - 10v + 25$$

$$0 = v^2 - 11v + 23$$

$$0 = (v-6)(v-3)$$

$$\boxed{v=6} \text{ or } v=3$$

$$\checkmark \quad 2+4=6 \quad 1+4=5$$

✓ X

$$\#24. \frac{2b+3}{b-3} < 1$$

$$\frac{2b+3}{b-3} - 1 < 0$$

$$\frac{2b+3}{b-3} - \frac{b-3}{b-3} < 0$$

$$\frac{2b+3-b+3}{b-3} < 0$$

$$\frac{b+6}{b-3} < 0$$

crit #)  $-6, 3$

$(-\infty, -6)$	$-$	$\frac{(-)}{(-)} = +$	✓
$(-6, 3)$	$0$	$\frac{(+)}{(-)} = -$	
$(3, \infty)$	$+$	$\frac{(+)}{(+)} = +$	

$$\boxed{(-6, 3)}$$

$$\#26. 44 = (r-3)^2$$

$$r-3 = \pm\sqrt{44} = \pm\sqrt{4\sqrt{11}} = \pm 2\sqrt{11}$$

$$\boxed{r = 3 \pm 2\sqrt{11}}$$

$$\#25. \frac{x-1}{3x-8} \leq 2$$

$$\frac{x-1}{3x-8} - \frac{2(3x-8)}{3x-8} \leq 0$$

$$\frac{x-1-6x+16}{3x-8} \leq 0$$

$$\frac{-5x+15}{3x-8} \leq 0$$

$$\begin{aligned} -5x+15 &= 0 \\ -5x &= -15 \\ x &= 3 \end{aligned}$$

$(-\infty, \frac{8}{3})$	$0$	$\frac{(+)}{(-)} = -$	✓
$(\frac{8}{3}, 3)$	$\frac{17}{6}$	$+$	
$(3, \infty)$	$+$	$-$	

$$\boxed{(-\infty, \frac{8}{3}] \cup [3, \infty)}$$

Math Analysis  
P.4-P.5

Name Key  
Date \_\_\_\_\_ Period \_\_\_\_\_

Solve. Show work.

1.  $\frac{3x}{5} + x = \frac{2}{3}$

$$\frac{3x(3)}{5(3)} + \frac{x(3)}{1} = \frac{2(3)}{3}$$

$$9x + 15x = 10$$

$$24x = 10$$

$$x = \frac{10}{24} = \frac{5}{12}$$

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

$$2x(2x-5) = (x-3)(4x+1)$$

$$4x^2 - 10x = 4x^2 + x - 12x - 3$$

$$-10x = -11x - 3$$

$$x = -3$$

3.  $-3x^2 + 4x + 6 = 0$

$$x = \frac{-4 \pm \sqrt{16 + 4(3)(6)}}{2(-3)} = \frac{-4 \pm \sqrt{88}}{-6}$$

$$= \frac{-4 \pm \sqrt{4} \sqrt{22}}{-6} = \frac{-4 \pm 2\sqrt{22}}{-6}$$

$$x = \frac{2 \pm \sqrt{22}}{3}$$

4. Solve and graph the solution.

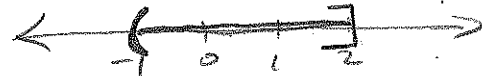
$$-2 < 3x + 1 \leq 7$$

$$-1 - 1 - 1$$

$$-3 < 3x \leq 6$$

$$\frac{-3}{3} < \frac{3x}{3} \leq \frac{6}{3}$$

$$-1 < x \leq 2 \quad (-1, 2]$$



5. Solve and graph the solution.

$$|3x - 1| > 9$$

$$3x - 1 > 9$$

$$3x - 1 < -9$$

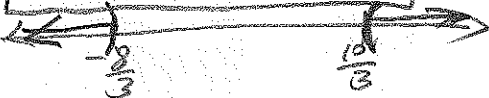
$$3x > 10$$

$$3x < -8$$

$$x > \frac{10}{3}$$

$$x < -\frac{8}{3}$$

$$x: (-\infty, -\frac{8}{3}) \cup (\frac{10}{3}, \infty)$$



6. Solve.  $2x^3 \leq 4x^4$

$$4 - 2x^3 - 2x^3$$

$$0 \leq 4x^4 - 2x^3$$

$$4x^4 - 2x^3 \geq 0$$

$$(2x^3)(2x - 1) \geq 0$$

critical #'s: 0, 1/2

$$x: (-\infty, 0] \cup [\frac{1}{2}, \infty)$$

$(-\infty, 0)$	-1	$(-)(-) = +$	✓
$(0, \frac{1}{2})$	1/4	$(+)(-) = -$	✗
$(\frac{1}{2}, \infty)$	1	$(+)(+) = +$	✓

7. Solve.  $\frac{2}{x+2} \geq \frac{3}{x-1}$

$$\frac{2}{x+2} - \frac{3}{x-1} \geq 0$$

$$\frac{2 - 3(x+2)}{(x+2)(x-1)} \geq 0$$

$$\frac{-x-4}{(x+2)(x-1)} \geq 0$$

crit #'s: -4, -2, 1

$(-\infty, -4)$	-9	$\frac{(+)}{(-)(-)} = +$	✓
$(-4, -2)$	-8	$\frac{(-)}{(-)(-)} = -$	✗
$(-2, 1)$	0	$\frac{(-)}{(+)(-)} = +$	✓
$(1, \infty)$	2	$\frac{(-)}{(+)(+)} = -$	✗

$$x: (-\infty, -4] \cup (-2, 1)$$