Thursday 1/29 5.1.3 (5-48 → 5-54)

5-48) a) $f(3) = 5(3) - 3 = 15 - 3 = 12$

$g(f(3)) = (12-1)^2 = 11^2 = \boxed{121}$

b) $f(g(3)) = (3-1)^2 = 2^2 = 4$

$5(4) - 3 = 20 - 3 = \boxed{17}$

5-49) a) $(x+1)(2x^2-3)$

$2x^3 - 3x + 2x^2 - 3$

$\boxed{2x^3 + 2x^2 - 3x - 3}$

b) $(x+1)(x^2-2x+3)$

$x^3 - 2x^2 + 3x + x^2 - 2x + 3$

$\boxed{x^3 - x^2 + x + 3}$

c) $2(x+3)(x+3)$

$2(x^2+6x+9)$

$\boxed{2x^2 + 12x + 18}$

d) $(x+1)(2x-3)^2$

$(x+1)(4x^2-12x+9)$

$4x^3 - 6x^2 + 9x + 4x^2 - 12x + 9$

$\boxed{4x^3 - 2x^2 - 3x + 9}$

5-50) a) $\frac{3x}{5} = \frac{(x-2)}{4}$

$12x = 5x - 10$

$-5x \quad -5x$

$7x = -10$

$\boxed{x = -\frac{10}{7}}$

b) $\frac{4x-1}{x} = \frac{3x}{1}$

$4x - 1 = 3x^2$

$0 = 3x^2 - 4x + 1$

$0 = 3x^2 - 3x - 1x + 1$

$3x(x-1) - 1(x-1)$

$0 = (3x-1)(x-1)$

$\boxed{x = 1/3 \quad x = 1}$

AC = 3, $-3 \cdot -1$

c) $\left(\frac{2x}{5} - \frac{1}{3} = \frac{137}{3}\right)\frac{15}{1}$

$3(2x) - 5 = 5(137)$

$6x - 5 = 685$

$6x = 690$

$\boxed{x = 115}$

d) $\frac{4x-1}{x+1} = \frac{x-1}{1}$

$4x - 1 = (x-1)(x+1)$

$4x - 1 = x^2 - 1$

$0 = x^2 - 4x$

$0 = x(x-4)$

$\boxed{x = 0 \quad x = 4}$

5-51) a) $y = x^2 + 3$

$y = \pm\sqrt{x - 3}$

b) $y = (\frac{1}{4}x + 6)^3$

$y = 4(\sqrt[3]{x} - 6)$

c). $y = \sqrt{5x + 6}$

$$\boxed{y = \frac{x^2 + 6}{5}}$$

5-52) $x^2 + y^2 - 4x - 16 = 0$

$x^2 - 4x + y^2 - 16 = 0$

$(x^2 - 4x + 4) + y^2 - 16 - 4 = 0$

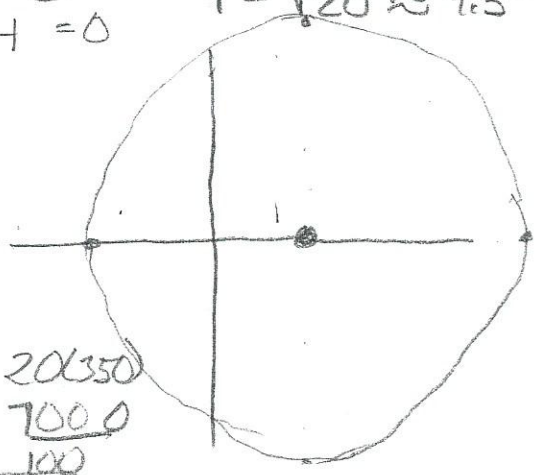
$(x - 2)^2 + y^2 - 20 = 0$

$(x - 2)^2 + (y - 0)^2 = 20$

Parent graph: $x^2 + y^2 = r^2$

C (2, 0)

$r = \sqrt{20} \approx 4.5$



5-53) $\frac{20}{100} = \frac{x}{350}$

$100x = 20(350)$

$\frac{100x}{100} = \frac{7000}{100}$

$\boxed{x = 70}$

5-54) a) $\frac{(x+3)(x+1)}{x(x+3)} \cdot \frac{3x}{(x+1)}$ $\boxed{= 3}$

b) $\frac{y^2}{y+4} - \frac{16}{y+4} = \frac{y^2 - 16}{y+4} = \frac{(y-4)(y+4)}{(y+4)} = \boxed{y - 4}$

c) $\frac{x(x+1)}{(x-5)(x+1)} \cdot \frac{(x-5)}{3x^2} = \boxed{\frac{1}{3x}}$

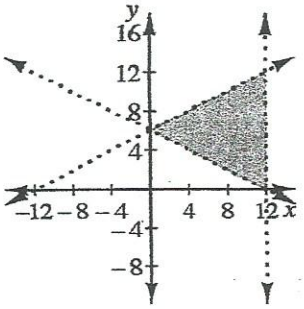
d) $\frac{x^2 - 6x}{(x-2)(x-2)} + \frac{4x}{(x-2)(x-2)} = \frac{x^2 - 2x}{(x-2)(x-2)} = \frac{x(x-2)}{(x-2)(x-2)}$

$$\boxed{\frac{x}{x-2}}$$

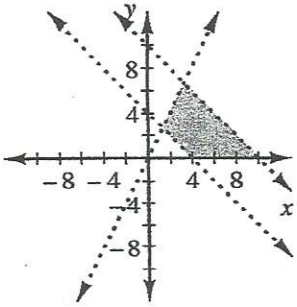
ALG 2 KEY (1-8) -ASSIGNED 1/15

Answers

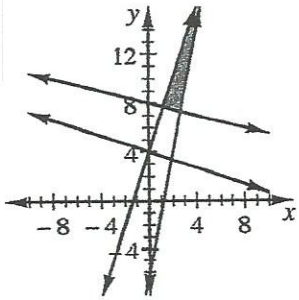
1.



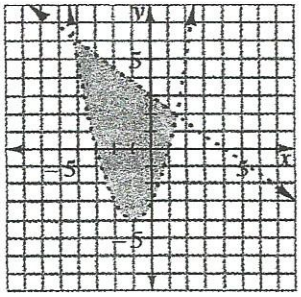
2.



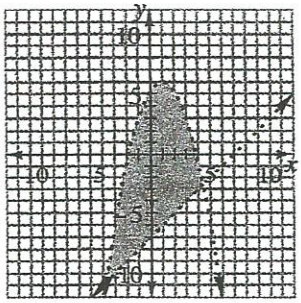
3.



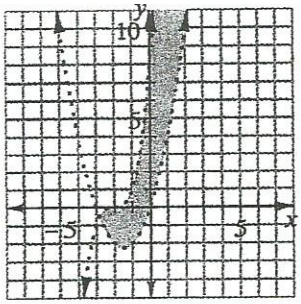
4.



5.



6.

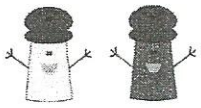


7. $y \le \frac{1}{3}x + 4$
$y \le -x + 8$
$y \ge -\frac{1}{2}x + 4$

8. $y \ge (x-6)^2 - 5$
$y \le 0$

Name KEY Period_____

What did Pepper say to Salt?



Solve each equation. ANSWER KEY

H. $\sqrt[3]{x} = -3$ -27	I. $\sqrt[4]{x+3} = 2$ 13	W. $\sqrt[3]{x+5} = 2$ 3
T. $3 + \sqrt{4x-5} = 10$ $\frac{27}{2}$	E. $5 - \sqrt[4]{x} = 0$ 625	H. $\sqrt[3]{2x+5} - 3 = 0$ 11
Y. $\sqrt[4]{3-x} = -1$ No Solution	A. $\sqrt[3]{3-2x} = -2$ $\frac{11}{2}$	N. $3(\sqrt[4]{2x+6}) - 6 = 0$ 5
K. $\sqrt[3]{x-5} + 1 = -1$ -3	S. $\sqrt[4]{7x+2} + 9 = 11$ 2	H. $\sqrt[3]{6x-5} + 2 = -3$ -20
G. $\sqrt[3]{2x+1} + 5 = 2$ -14	A. $2\sqrt[3]{7x-1} = 0$ $\frac{1}{7}$	S. $\sqrt[3]{2n-5} = -2$ $-\frac{3}{2}$

H	E	Y	W	H	A	T	S	S	H	A	K	I	N	G
-20	625	NO SOLUTON	3	-27	$\frac{11}{2}$	$\frac{27}{2}$	2	$-\frac{3}{2}$	11	$\frac{1}{7}$	-3	13	5	-14