

42 problems
Review/p352 #46 worth 2 points

Algebra 2 Assignment 34

NEW Book; p565, #5-39 odd

5. $\frac{30xy}{12x^2}$ GCF = $6x$ $\frac{6x(5y)}{6x(2x)} = \frac{5y}{2x}$

7. $\frac{(c+5)}{(2c+10)}$ GCF = $(c+5)$ $\frac{(c+5) \cdot 1}{(c+5) \cdot 2} = \frac{1}{2}$

9. $\frac{3ab \cdot 3ba^2}{4ac \cdot 2b^2}$ = $\frac{3a^2}{2bc}$

11. $\frac{(3a^2)}{(a+2)} \cdot \frac{(a+2)}{a^2} = \frac{3a^2 \cdot (a+2)}{(a+2) a^2} = 3$

13. $\frac{(4a+4)}{3} \cdot \frac{1}{(a+1)} = \frac{4(a+1) \cdot 1}{3(a+1)} = \frac{4}{3}$

15. $\frac{2y}{y^2-4} \cdot \frac{(y^2-4y+4)}{3} = \frac{2y}{(y^2-4)} \cdot \frac{(y-2)(y-2)}{3} = \frac{2y}{(y+2)(y-2)} \cdot \frac{(y-2)(y-2)}{3}$

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

17. $\frac{45xy^3}{20y^7} = \frac{5y^3(9x)}{5y^3(4y^4)} = \frac{9x}{4y^4}$

19. $\frac{(5x-5)}{(x^2-1)} = \frac{5(x-1)}{(x+1)(x-1)} = \frac{5}{x+1}$

21. $\frac{y^2}{(x+2)} \div \frac{y}{(x+2)} = \frac{y^2}{(x+2)} \cdot \frac{(x+2)}{y} = \frac{y^2}{y} = y$

23. $\frac{2a^2}{5b^2} \cdot \frac{3bc^2}{4a^2} = \frac{3bc^2}{5 \cdot 4b^2} = \frac{3c}{20b}$

25. $\frac{2x^3y}{z^5} \div \left(\frac{-4xy}{z^3}\right)^2 = \frac{2x^3y}{z^5} \div \frac{16x^2y^2}{z^6} = \frac{2x^3y}{z^5} \cdot \frac{z^6}{16x^2y^2} = \frac{1xz}{8y}$

27. $\left(\frac{2x}{y}\right)^2 \cdot \frac{5}{6x} = \frac{4x^2}{y^2} \cdot \frac{5}{6x} = \frac{10x}{3y^2}$

Asmt 34-continued

p565

$$29. \frac{(xy)^3}{a^3} \div \frac{x^2y^3}{(ab)^3} = \frac{xy \cdot (ab)^3}{a^3 x^2y^3} = \frac{xy a^3 b^3}{a^3 x^2y^3} = \frac{b^3}{xy^2}$$

$$31. \frac{9x^2y^3}{(5xyz)^2} \div \frac{(3xy)^3}{20x^2y} = \frac{9x^2y^3}{25x^2y^2z^2} \cdot \frac{20x^2y}{27x^3y^3} = \frac{4}{15xyz^2}$$

$$33. \frac{3x^2-3}{2x^2+8x+6} \div \frac{5x^2-10x+5}{4x+12} = \frac{3(x+1)(x-1)}{2(x+1)(x+3)} \cdot \frac{4(x+3)}{5(x-1)(x+1)} = \frac{6}{5(x-1)}$$

$$35. \frac{12x+6}{21x^2-21} \div \frac{6x^2+9x+3}{7x^3-7x^2} = \frac{6(2x+1)}{21(x^2-1)} \cdot \frac{7x^2(x-1)}{3(2x+1)(x+1)} = \frac{2x^2}{3(x+1)^2}$$

$$37. \frac{5x^2+10x-75}{4x^2-24x-28} \cdot \frac{2x^2-10x-28}{x^2+7x+10} = \frac{5(x^2+2x-15)}{2^2(x^2-6x-7)} \cdot \frac{2(x^2-5x-14)}{x^2+7x+10}$$

$$= \frac{5(x+5)(x-3)}{2(x-7)(x+1)} \cdot \frac{(x-7)(x+2)}{(x+5)(x+2)} = \frac{5(x-3)}{2(x+1)}$$

$$39. \frac{m+n}{5} \div \frac{m^2+n^2}{15} = \frac{m+n}{5} \cdot \frac{15}{m^2+n^2} = \frac{3(m+n)}{m^2+n^2}$$

REVIEW

1. Solve: $|1-2x| < \frac{1}{2}$

$$2(-\frac{1}{2} < 1-2x < \frac{1}{2})^2$$

$$\frac{-1 < 2-4x < 1}{-2 \quad -2 \quad -2}$$

$$\frac{-3 < -4x < -1}{-4 \quad -4 \quad -4}$$

$$\frac{3}{4} > x > \frac{1}{4} \rightarrow \frac{1}{4} < x < \frac{3}{4}$$

Asmt 34 - continued

(Review)

2. $m = \frac{1}{5}$, passes through $(5, 2)$

$y = mx + b$

$2 = \frac{1}{5}(5) + b \rightarrow 2 = 1 + b \rightarrow 1 = b$

$y = \frac{1}{5}x + 1$

3. $\frac{p^2 m^5 p^{-3} (2p)^{-3}}{m^6 (m^{-2})^2 m p^3} = \frac{p^{-1} m^5}{m^7 p^3 m^4 (2p)^3} = \frac{m^5 \cdot m^4}{m^7 p^3 p^3 8p^3} = \frac{m^2}{8p^7}$

$\frac{m^2}{8p^7}$

4. $(3x-1)(2x^2-x+1)$

$= 6x^3 - 3x^2 + 3x - 2x^2 + x - 1 = 6x^3 - 5x^2 + 4x - 1$

5. Factor: $100m^8 - 9 = (10m^4 + 3)(10m^4 - 3)$

6. $\sqrt[4]{128a^4b^3} = 4 \cdot 2 \cdot a^2 b \sqrt[4]{2b} = 8a^2 b \sqrt[4]{2b}$

7. $\frac{(9+12i)(8-3i)}{(8+3i)(8-3i)} = \frac{72 - 27i + 96i - 36i^2}{64 - 9i^2} = \frac{108 + 69i}{73}$

8. $16^{5/4} = (\sqrt[4]{16})^5 = 2^5 = 32$

9. $h^2 - 4h - 7 = 0$

$(\frac{4}{2})^2 = 2^2 = 4$

$h^2 - 4h + 4 = 7 + 4$

$\sqrt{(h-2)^2} = \sqrt{11}$

$h - 2 = \pm \sqrt{11} \rightarrow h = 2 \pm \sqrt{11}$

10. $x^2 + 19x - 12 = 0$

$(\frac{19}{2})^2 = \frac{361}{4}$

$x^2 + 19x + \frac{361}{4} = 12 + \frac{361}{4}$

$(x + \frac{19}{2})^2 = \frac{48 + 361}{4}$

$\sqrt{(x + \frac{19}{2})^2} = \pm \sqrt{\frac{409}{4}}$

$x + \frac{19}{2} = \pm \sqrt{409} / 2$

$x = \frac{-19 \pm \sqrt{409}}{2}$

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Asmt 34 - continued

Solve by quadratic formula.

11. $x^2 - 4x + 1 = 0$ $x = \frac{4 \pm \sqrt{16 - 4(1)(1)}}{2(1)} = \frac{4 \pm \sqrt{12}}{2} = \frac{4 \pm 2\sqrt{3}}{2} = \boxed{2 \pm \sqrt{3}}$

12. $x^2 - 2x + 5 = 0$ $x = \frac{2 \pm \sqrt{4 - 4(1)(5)}}{2(1)} = \frac{2 \pm \sqrt{4 - 20}}{2} = \frac{2 \pm \sqrt{-16}}{2} = \frac{2 \pm 4i}{2} = \boxed{1 \pm 2i}$

13. $x^2 - 12x + 42 = 0$ $x = \frac{12 \pm \sqrt{144 - 4(1)(42)}}{2(1)} = \frac{12 \pm \sqrt{144 - 168}}{2} = \frac{12 \pm \sqrt{-24}}{2}$
 $= \frac{12 \pm 2i\sqrt{6}}{2} = \boxed{6 \pm i\sqrt{6}}$

14. $2x^2 + 7x - 11 = 0$ $x = \frac{-7 \pm \sqrt{49 - 4(2)(-11)}}{2(2)} = \frac{-7 \pm \sqrt{49 + 88}}{4} = \frac{-7 \pm \sqrt{137}}{4}$

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(2pts)

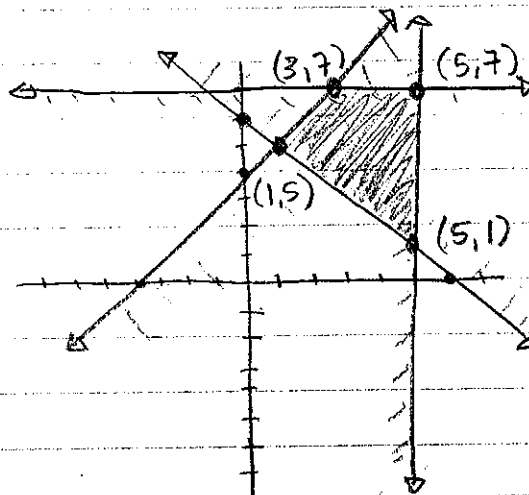
46. $y \leq 7$
 $x \leq 5$

$y \geq -x + 6$

$y \leq x + 4$

$f(x,y) = 2x - 3y$

(x,y)	f(x,y) = 2x - 3y
(1,5)	2(1) - 3(5) = 2 - 15 = -13
(3,7)	2(3) - 3(7) = 6 - 21 = -15
(5,7)	2(5) - 3(7) = 10 - 21 = -11
(5,1)	2(5) - 3(1) = 10 - 3 = 7



Min is -15 at (3,7), Max is 7 at (5,1)

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Solve by graphing (find zeros)

38. $n^2 - 3n = 0$ $\boxed{n = 0, 3}$

40. $4v^2 - 8v - 5 = 0$ $\boxed{v = -0.5, 2.5}$

page 400 - solve by factoring

19. $5y^2 = 80 \rightarrow 5y^2 - 80 = 0 \rightarrow 5(y^2 - 16) = 0 \rightarrow 5(y+4)(y-4) = 0$
 $\rightarrow 5=0, (y+4)=0 \rightarrow y=-4, (y-4)=0 \rightarrow y=4$ $\boxed{y = -4, 4}$

Asmt 34 - Continued

p 400:

23. $25x^3 - 25x^2 = 36x$
 $\frac{25x^3 - 25x^2 - 36x}{-36x - 36x} = 0$

$x(25x^2 - 25x - 36) = 0$
 $x(5x + 4)(5x - 9) = 0$
 $x = 0, \frac{5x + 4 = 0}{-4 -4} \rightarrow \frac{5x = -4}{5} \rightarrow x = -\frac{4}{5}$
 $\frac{5x - 9 = 0}{+9 +9} \rightarrow \frac{5x = 9}{5} \rightarrow x = \frac{9}{5}$

$x = 0, -\frac{4}{5}, \frac{9}{5}$

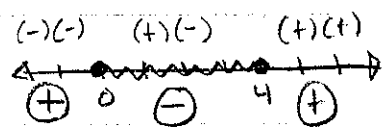
24. $r^2 - 3r - 70 = 0$
 $(r - 10)(r + 7) = 0$

$r - 10 = 0 \rightarrow \frac{+10 +10}{r = 10}$
 $r + 7 = 0 \rightarrow \frac{-7 -7}{r = -7}$

$r = -7, 10$

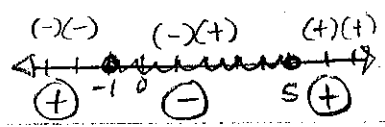
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20. $x^2 - 4x \leq 0$
 $x(x - 4) \leq 0$
 $x = 0, x = 4$



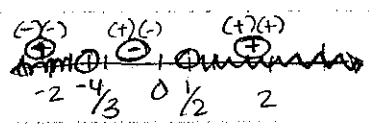
$0 \leq x \leq 4$

42. $p^2 - 4p \leq 5$
 $\frac{p^2 - 4p - 5}{-5 -5} \leq 0$



$-1 \leq p \leq 5$

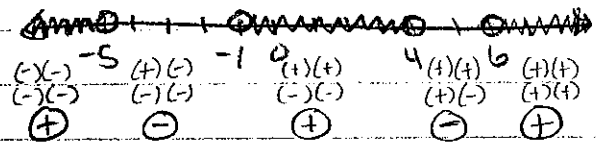
44. $6s^2 + 5s > 4$
 $\frac{6s^2 + 5s - 4}{-4 -4} > 0$
 $(3s + 4)(2s - 1) > 0$
 $s = -\frac{4}{3}, s = \frac{1}{2}$



$s < -\frac{4}{3}$ or $s > \frac{1}{2}$

54. $(x + 5)(x + 1)(x - 4)(x - 6) > 0$
 $x = -5, x = -1, x = 4, x = 6$

$x < -5$ or $-1 < x < 4$ or $x > 6$



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