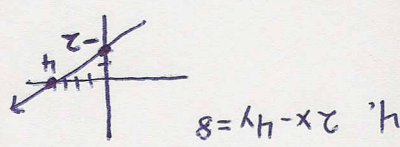


1. $(\frac{3}{2} - 1) \div (\frac{2}{1} - \frac{4}{1})^2$

$= \frac{1}{2} \div (\frac{2}{1} - \frac{4}{1})^2$
 $= \frac{1}{2} \div \frac{4}{1} = \frac{1}{8}$

2. a) $x^6 \cdot x^3 = x^9$
 b) $\frac{x^6}{x^3} = x^3$
 c) $\frac{x^9 \cdot y^7}{x^4 \cdot y^2} = x^5 y^5$
 d) $(x^2)^4 = x^8$

3. a) $x^3 + 12x^2 + 36x = x(x^2 + 12x + 36)$
 $= x(x+6)^2$
 b) $2x^2 + 3x - 2 = (2x - 1)(x + 2)$
 c) $x^3 + 2x^2 - 4x - 8 = (x^2 + 2x - 4)(x + 2)$
 $= (x^2 - 4)(x + 2) = (x - 2)(x + 2)(x + 2)$
 d) $x^2 - 16y^2 = (x + 4y)(x - 4y)$



4. $y = -2x + 4$
 5. a) $\frac{2}{5}x - \frac{1}{5}y = \frac{2}{5}$
 b) $\frac{2}{5}x - \frac{1}{5}y = \frac{2}{5}$
 c) $5x + 4y = 2$
 7. a) $m = \frac{4-3}{1-2} = \frac{1}{-1} = -1$
 b) $y - 3 = \frac{1}{-1}(x + 2)$

8. $3(x-2) - [x - (3x+5)] = 2$
 $3x - 6 - [x - 3x - 5] = 2$
 $3x - 6 - [-2x - 5] = 2$
 $3x - 6 + 2x + 5 = 2$
 $5x - 1 = 2$
 $x = \frac{3}{5}$

17. $x = m + 1$
 $2x = m + 2$
 $x + 40 = m + 3$
 $4x + 40 = 180$
 $4x = 140$
 $x = 35$
 $2x = 70$
 $x + 40 = 75$

16. $x - .32x = 136$
 $.68x = 136$
 $x = \$200$

15. $x = \text{smaller } \phi$
 $x + 5x + 10 = 180$
 $6x + 10 = 180$
 $6x = 170$
 $x = \frac{85}{3} = 28\frac{1}{3}$
 $5x + 10 = 450 = 151\frac{2}{3}$

measure of larger ϕ
 $x = \text{smaller } \phi$

14. $x + .06x = 127.20$
 $1.06x = 127.20$
 $x = \frac{127.20}{1.06} = 120$

13. $x + 2(2x^2 + 3x - 2) = 2x - 1$
 $12x^3 - 2x^2 - 16x - 5 = 2x - 1$
 $12x^3 - 2x^2 - 18x - 4 = 0$
 $12x^3 + 10x^2 - 12x^2 - 10x - 5 = 0$
 $= 12x^3 + 10x^2 - 12x^2 - 10x - 5 = 0$
 c) $(2x^2 - 2x - 1)(6x + 5)$
 b) $(x + 2)(x - 3) = x^2 - x - 6$
 $= 4x^3 - 2x^2 + 8x$

12. a) $2x(2x^2 - x + 4) = x^3 - 2x^2 + 8x - 6$
 $3x^3 + 3x^2 + 2x - 1 = -2x^3 + 5x^2 + 6x - 5$

11. $3x^3 + 3x^2 + 2x - 1 = -2x^3 + 5x^2 + 6x - 5$
 $x^3 - x^2 - 5x + 19 = 4x^3 - 3x^2 - 6x + 21$
 $-3x^3 + 2x^2 + x - 2 = 4x^3 - 3x^2 - 6x + 21$

20. $x^2 + 8x - 16 = 0$
 This is prime.

19. $x^2 - 8x + 15 = 0$
 $(x - 3)(x - 5) = 0$
 $x = 3, 5$

