Algebra 2 Review 4.1-4.4
Midchapter Test is ~~Mon.~~ Tues.
Quiz 4.3-4.4 is today

Solve each equation by factoring. (Lesson 4-3)

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

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

-12

$-4 \quad 3$

-1

$x-4=0$ $\quad x+3=0$

$x = 4$

$x = -3$

13. $2x^2 + 5x - 3 = 0$

$a=2 \quad b=5 \quad c=-3$

$a \cdot c$

-6

$-1 + 6$

$2 \quad 3$

$6x - 1x$

$(2x^2 - 1x)(6x - 3) = 0$

$x = \frac{1}{2}$

$x = -3$

$x(2x-1) + 3(2x-1) = 0$

$(2x-1)(x+3) = 0$

$2x-1=0 \quad x+3=0$

$2x=1$

Simplify. (Lesson 4-4)

17. $\sqrt{-81}$

$\sqrt{81} \cdot \sqrt{-1}$

$9i$

18. $\sqrt{-25x^4y^5}$

x x x x

y y y y y

$\sqrt{25x^4y^5}\sqrt{-1}$

$5x^2y^2\sqrt{y}\,i$

$ax^2+bx+c=0$ $4x^2+23x-6=0$

14. Write a quadratic equation in standard form with roots -6 and $\frac{1}{4}$. (Lesson 4-3) $4x^2+24x-x-6=0$

Reminder: standard form is always integers!

4. $4x^2+6x-\frac{1}{4}x-\frac{6}{4}=0$

$(x+6)(x-\frac{1}{4})=0$

$x+6=0$ $x-\frac{1}{4}=0$

$x=-6$ $x=\frac{1}{4}$

$+6$ $+6$

$x+6$

$x-\frac{1}{4}$

$-\frac{1}{4}x$ $-\frac{6}{4}$

x^2 $6x$

19. $(15 - 3i) - (4 - 12i)$

20. i^{37}

$15 - 3i - 4 + 12i$

$11 + 9i$

~~$9i + 11$~~

$i^{36} \cdot i^{1} = i$

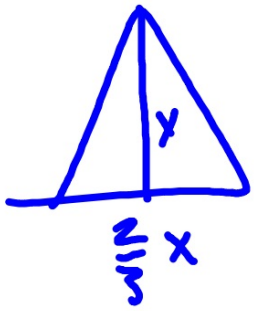
$h = 6$ cm $b = 4$ cm

15. TRIANGLES Find the dimensions of a triangle if the base is $\frac{2}{3}$ the measure of the height and the area is 12 square centimeters. (Lesson 4-3)

$A = \frac{1}{2}bh$

$12 = \frac{1}{2} \cdot \frac{2}{3}x \cdot x$

$12 = \frac{2}{6}x^2$



$12 = \frac{1}{3}x^2$

$\sqrt{36} = \sqrt{x^2}$

$x = \pm 6$

21. $(5 - 3i)(5 + 3i)$ =34

$5-3i$

$5+3i$

$25+15i$ $-15i$ $-9i^2$ -1

$25+9$

22. $\frac{3-i}{2+5i}\left(\frac{2-5i}{2-5i}\right)$

$12+3i$

6

$2+\frac{1}{2}i$

~~$\frac{1}{2}i+2$~~

1. Find the y-intercept, the equation of the axis of symmetry, and the x-coordinate of the vertex for $f(x) = 2x^2 + 8x - 3$. Then graph the function by making a table of values.
(Lesson 4-1)

2. **MULTIPLE CHOICE** For which equation is the axis of symmetry $x = 5$? (Lesson 4-1)

A $f(x) = x^2 - 5x + 3$

B $f(x) = x^2 - 10x + 7$

C $f(x) = x^2 + 10x - 3$

D $f(x) = x^2 + 5x + 2$

4. **PHYSICAL SCIENCE** From 4 feet above the ground, Maya throws a ball upward with a velocity of 18 feet per second. The height $h(t)$ of the ball t seconds after Maya throws the ball is given by $h(t) = -16t^2 + 18t + 4$. Find the maximum height reached by the ball and the time that this height is reached. (Lesson 4-1)