

March 5, 2013

warm-ups

Change the following from standard form to vertex form.

$$y = x^2 - 8x - 40$$

$$y = x^2 + 20x - 81$$

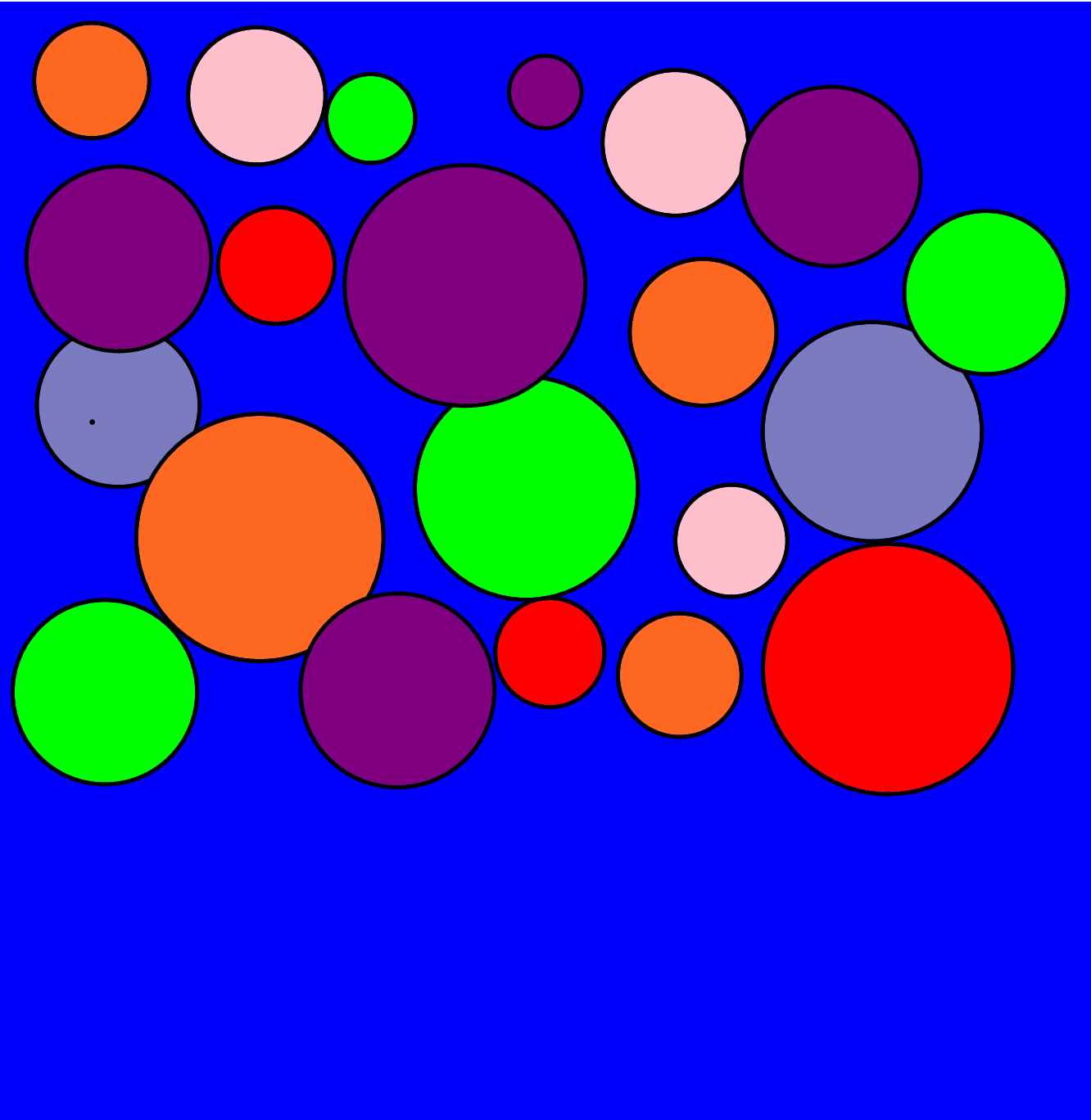
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Each table needs a white board

Each team will be given the chance to pick a question. The choosing team can earn the full point value if correct.

Every other team that answer correctly will hear  $1/2$  the point value.

The team with the most points wins!!



200 points



Factor

$$3x^2 - 14x - 24$$

100 points



Factor

$$\sqrt{25r^2 - 16}$$

$$(5r - 4)(5r + 4)$$

~~$$25r^2 + 16$$~~

400 points



Solve by completing the square

$$(x^2 - 18x) + 53 = 8$$

$$(x - \overset{\downarrow \frac{1}{2}}{9})^2 + 53 - 81 = 8$$

$$(x - 9)^2 - 28 = 8$$

+ 28    + 28

$$\sqrt{(x-9)^2} = \sqrt{36}$$

$$x - 9 = \pm 6$$

+ 9    + 9

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$$x = 9 \pm 6$$

$$x = 15$$

$$x = 3$$

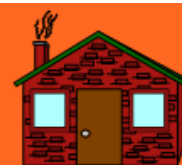
300 points



Solve by factoring

$$2x^2 = -7x - 6$$

500 points



Solve by completing the  
square

$$x^2 - 10x - 24 = -6$$



200 points



Solve by using the  
quadratic equation

$$9x^2 = -9$$

200 points



Solve by taking the  
square roots

$$9x^2 - 1 = 80$$

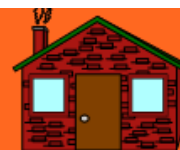
300 points



Solve by factoring

$$7x^2 = 16 + 54x$$

300 points



Solve by quadratic formula

$$2x^2 = 9x + 5$$

300 points



Factor the following

$$10x^2 + 27x + 18$$

Handwritten work showing the factoring process:

$$\begin{array}{l}
 \xrightarrow{\quad \quad \quad} \quad \quad \quad \xrightarrow{\quad \quad \quad} \\
 \begin{array}{l}
 (10x + 12)(10x + 15) \\
 \hline
 \begin{array}{l}
 2 \qquad \qquad 5 \\
 (5x + 6)(2x + 3)
 \end{array}
 \end{array}
 \end{array}
 \quad = \quad
 \begin{array}{l}
 180 \\
 \hline
 12 + 15 \\
 12 \cdot 15
 \end{array}$$

100 points



Factor

$$x^2 - 4$$

200 points



Solve by square roots

$$10x^2 + 3 = 13$$

$$\begin{array}{r} -3 \quad -3 \\ \hline \end{array}$$

$$\frac{10x^2}{10} = \frac{10}{10}$$

$$\sqrt{x^2} = \sqrt{1} \quad x = \pm 1$$

400 points



Find the value of the discriminant and  
which type of solutions

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



500 points



Factor

$$25x^2 + 30x + 9$$

300 points



Factor

$$15p^3 - 6p^2 - 48p$$

$$3p(5p^2 - 2p - 16)$$

$$\begin{array}{c} \uparrow \qquad \qquad \qquad \uparrow \\ \text{---} \qquad \qquad \qquad \text{---} \\ \qquad \qquad \qquad -80 \\ \qquad \qquad \qquad \swarrow \downarrow \\ \qquad \qquad \qquad -10 \cdot 8 \end{array}$$

$$3p(5p - 10)(5p + 8)$$

$$3p(p - 2)(5p + 8)$$

300 points



Factor

$$4x^2 + 20x + 9$$

200 points



Factor

$$14x^3 - 20x^2$$

300 points



Solve by factoring

$$\underline{2x^2} + \underline{3x} = 0$$

GCF

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

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

$$2x = -3$$

$$x = -3/2$$

1000 points



Find the value of the discriminant and  
which type of solutions

$$4x^2 + 4 = 8x$$

400 points



Solve by factoring

$$25x^2 - 12 = 20x$$

