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FOM – Flashback #3

1. Determine the measure of each interior angle of a regular 12 sided polygon.

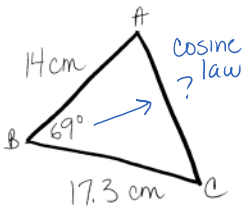
$S(n) = 180(n-2)$

$S(n) = 180(12-2)$

$S(12) = 1800°$

$\text{Int}\angle = \frac{S(n)}{n} = \frac{1800}{12} = 150°$

2. Determine the unknown side length.



$b^2 = a^2 + c^2 - 2ac\cos B$

$b^2 = (17.3)^2 + (14)^2 - 2(17.3)(14)\cos 69°$

$b^2 \doteq (321.6965)$

$b \doteq 17.94$ cm

3. Determine the standard deviation for the following set of data.

12	10	19
18	14	22
31	30	26
16	12	29

$\bar{x} = \frac{77 + 66 + 96}{12} = \frac{239}{12} \doteq 19.92$

4. If $\bar{x} = 23.4$ and $\sigma = 4.9$, what is the z score for someone who scored 28? What percent of the data were below this score?

$Z = \frac{x - \bar{x}}{\sigma} = \frac{28 - 23.4}{4.9} \doteq 0.939$

$\sim 82.6\%$

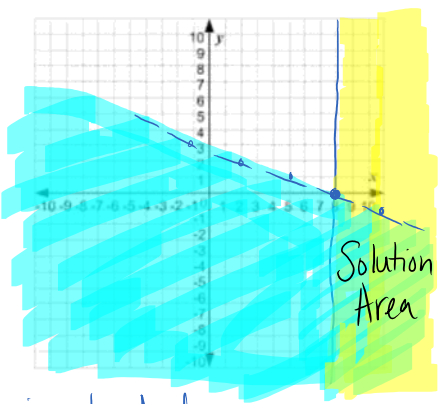
5. Determine which points are in the solution region and explain how you know.

$x \geq 8$

$3y + x < 8$

$\frac{3y}{3} < -\frac{x}{3} + \frac{8}{3}$

test $0 < 8$



Points: ~~(0,0)~~ (8,-2) (-10,15) (9,-10)

Yes Yes

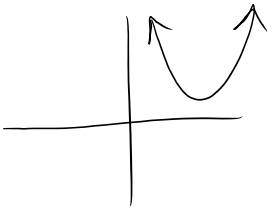
The points in the solution area (green). (8,-2) can be included because $x \geq 8$ is a solid line.

Also $8 \geq 8$ ✓ $3(-2) + 8 < 8$ ✓ and $9 \geq 8$ ✓ $3(-10) + 9 < 8$ ✓

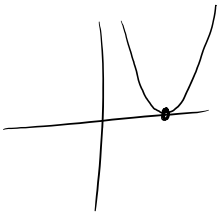
Positive leading coefficient

6. Show examples of how a "happy" quadratic equation could have no solutions, one solution or two solutions. Give an actual quadratic function that would go along with each situation..

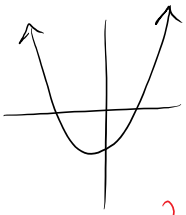
No solutions



One Solution



Two Solution



Example: $y=(x-3)^2+1$ $y=(x-3)^2$ $y=(x+1)^2-3$

7. If Mike is travelling 65 km/hr and Janet was traveling at 24 m/s, who is travelling slower? Show clearly how you know.

Mike: $65\ \frac{km}{hr} \cdot \frac{1000\ m}{1\ km} \cdot \frac{1\ hr}{60\ min} \cdot \frac{1\ min}{60\ sec} = \frac{65000\ m}{3600\ sec} = 18\ m/s$

Mike is traveling slower

8. Solve the equation $3x^2+5x=9$, give both exact and approximate solutions.

$3x^2+5x-9=0$

$a=3$
$b=5$
$c=-9$

$$x=\frac{-b\pm\sqrt{b^2-4ac}}{2a}$$

$$x=\frac{-5\pm\sqrt{25-4(3)(-9)}}{2(3)}$$

$$x=\frac{-5\pm\sqrt{25+108}}{6}$$

Exact $x=\frac{-5\pm\sqrt{133}}{6}$

Approx 1.09 and -2.76