Geometry 1-2(E)
Chapter 2 Review

Name: KEY

1.) The measure of the complement of an angle is thirty more than twice the measure of the angle. Find the measure of the angle, its complement, and its supplement.

ANGLE = x

COMP = $90-x$

SUPP = $180-x$

$90-x = 2x + 30$

$3x = 60$

$x = 20$

Angle: 20
Supplement: 20 160
Complement: 160 70

2.) Two supplementary angles are in a ratio of 3:5. Find the measure of the larger of the two angles.

$3x + 5x = 180$

$8x = 180$

$x = 22.5$

$3(22.5) = 67.5$

$5(22.5) = \boxed{112.5^\circ}$

3.) Given: $m\angle W = 168^\circ$

Find the measure of the ***supplement*** of any one of the three angles formed when $\angle W$ is trisected.

$\frac{168}{3} = 56$

$180 - 56 = \boxed{124^\circ}$

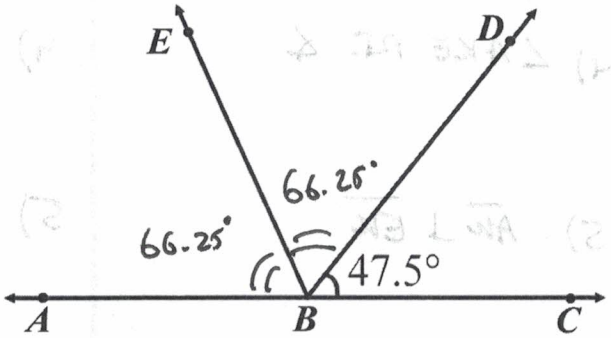
4.) Given: $\overline{BE}$ bisects $\angle ABD$ and $m\angle DBC = 47.5^\circ$

Find: $m\angle ABE$

$180 - 47.5 = 132.5$

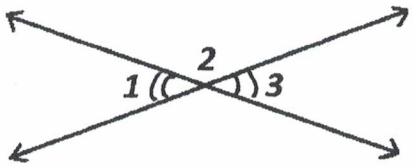
$\frac{132.5}{2} = 66.25$

$m\angle ABE = 66.25^\circ$



5.) $m\angle 1 = x^2 - 12$ and $m\angle 3 = 2x + 3$

Find the measure of $\angle 2$.



VERTICAL ∠s ARE ≅

$\angle 1 \cong \angle 3$

$x^2 - 12 = 2x + 3$

$x^2 - 2x - 15 = 0$

$(x+3)(x-5) = 0$

$x = -3, 5$

DOES NOT WORK

$m\angle 1 = (-3)^2 - 12 = -3$

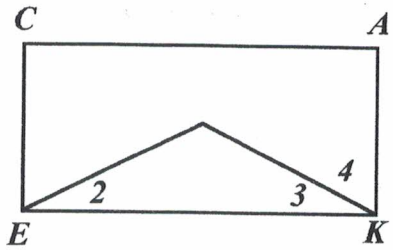
$m\angle 1 = (5)^2 - 12 = 13$

$m\angle 2 = 180 - 13 = \boxed{167°}$

6.) Given: $\angle 2$ is comp to $\angle 4$

$\angle 2 \cong \angle 3$

Prove: $\overline{AK} \perp \overline{EK}$



Statements	Reasons
1) $\angle 2$ COMP $\angle 4$	1) GIVEN
2) $\angle 2 \cong \angle 3$	2) GIVEN
3) $\angle 3$ COMP $\angle 4$	3) SUBSTITUTION PROPERTY
4) $\angle AKE$ RT. $\angle$	4) IF 2 ∠s ARE COMP, THEN THEY FORM A RT. ∠.
5) $\overline{AK} \perp \overline{EK}$	5) IF 2 SEGMENTS FORM RT. ∠s, THEN THEY ARE PERPENDICULAR.