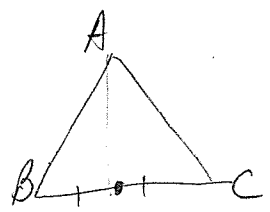


KEY

One Last Day of Review

1.  $\triangle ABC$  with  $A(2,0)$ ,  $B(-6,4)$  and  $C(4,-2)$



a. Find the equation of the line containing the median from A to BC.

$$\text{midpt} = \left( \frac{-6+4}{2}, \frac{4-2}{2} \right) = (1, 1)$$

$$M_{\text{med}} = \frac{0-1}{2-1} = -\frac{1}{1} = -1$$

$$y = -1(x) + b$$

$$0 = -1(1) + b$$

$$1 = b$$

$$y = -x$$

b. Find the equation of the line containing the altitude from A to BC.

$$M_{\overline{BC}} = \frac{4+2}{-6-4} = \frac{6}{-10} = -\frac{3}{5}$$

$$0 = -\frac{3}{5}(2) + b$$

$$\frac{6}{5} = b$$

$$y = -\frac{3}{5}x + \frac{6}{5}$$

c. Find the equation of the perpendicular bisector of AB.

$$\text{midpt} = \left( \frac{2-6}{2}, \frac{0+4}{2} \right) = (-2, 2)$$

$$M_{\overline{AB}} = \frac{0-4}{2+6} = -\frac{4}{8} = -\frac{1}{2}$$

$$M_{\perp} = 2$$

$$2 = 2(-2) + b$$

$$6 = b$$

$$y = 2x + 6$$

2. If  $AB = 12$  and A has the coordinate  $(3x + 5)$  and B has the coordinate  $(x - 2)$ , find the coordinates of A.

$$|(3x+5) - (x-2)| = 12$$

$$3x+5 - x+2 = 12$$

$$2x = 5$$

$$x = \frac{5}{2}$$

$$A = 3\left(\frac{5}{2}\right) + 5$$

$$= \frac{15}{2} + 5$$

$$2x+7 = -12$$

$$2x = -19$$

$$x = -\frac{19}{2}$$

$$= -9\frac{1}{2}$$

$$A = 3\left(-\frac{19}{2}\right) + 5$$

$$= -\frac{57}{2} + \frac{10}{2}$$

3. If  $a \parallel b$ , find  $x$  and  $y$ .

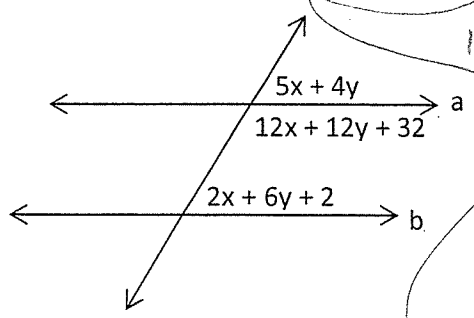
$$A = \frac{25}{2}$$

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

$$A = -\frac{47}{2}$$

$$B = \frac{-19 - \frac{4}{2}}{2}$$

$$= \frac{-23}{2} = -11\frac{1}{2}$$



$$5x+4y = 2x+6y+2 \rightarrow 3x-2y = 2$$

$$2x+6y+2 + 12x+12y+32 = 180$$

$$14x+18y = 146$$

$$27x-18y = 18$$

$$14x+18y = 146$$

$$41x = 164$$

$$x = 4$$

ck

$$\frac{140}{48+60+32 = 140 \checkmark}$$

$$8+30+2 = 40 \checkmark$$

$$20+4y = 8+6y+2$$

$$10 = 2y$$

$$5 = y$$

4. The measure of the supplement of  <sup>$x$</sup> an angle is ten less than the sum of two times the measure of the angle and the measure of its complement.

Find the measure of the angle, its complement and its supplement.

Let  $x = \text{meas. of angle}$   
 $90 - x = \text{meas. of its complement}$   
 $180 - x = \text{meas. of its supplement}$

$$180 - x = (2x + 90 - x) - 10$$

$$x = 50$$

$$50^\circ, \text{comp} = 40^\circ, \text{supp} = 130^\circ$$

5. You have a 38 sided regular polygon.

$$(38 - 2)180 =$$

a. Find the sum of the interior angles.  $6480^\circ$

b. Find the measure of one interior angle.  $170\frac{10}{19}^\circ$

$$\frac{6480}{38} = 170\frac{20}{38} = 170\frac{10}{19}$$

c. Find the sum of the exterior angles  $360^\circ$

d. Can this polygon tile the plane? NO

6. Logic Proof:

$$(\sim p \wedge q) \rightarrow c$$

$$\sim q \rightarrow m$$

$$\sim p$$

$$\sim c$$

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$$\therefore m$$

7. Truth Table:

$$[(\sim p \wedge q) \rightarrow q] \leftrightarrow p$$

not a tautology

| p | q | $\sim p$ | $\sim p \wedge q$ | $(\sim p \wedge q) \rightarrow q$ | $[(\sim p \wedge q) \rightarrow q] \leftrightarrow p$ |
|---|---|----------|-------------------|-----------------------------------|---|
| T | T | F        | F                 | T                                 | T   |
| T | F | F        | F                 | T                                 | T   |
| F | T | T        | T                 | T                                 | F   |
| F | F | T        | F                 | T                                 | F   |