

Geometry HW 1-2 Answers

① a) $AB = BC$ b/c midpoint creates 2 = parts

$$2x + 2 = 4x - 8$$

$$2x = 10$$

$$\boxed{x = 5}$$

$$AC = 2 \cdot AB$$

$$AB = 2(5) + 2 = 12$$

$$AC = 2 \cdot 12 = \boxed{24}$$

② a) $2 \cdot BC = AC$ b/c mdpt splits segment in $\frac{1}{2}$

$$2(4x + 2) = 9x - 7$$

$$8x + 4 = 9x - 7$$

$$x = 11$$

$$AB = BC$$

$$AB = 4(11) + 2 = \boxed{46 = BC}$$

③ a) $AB = BC$ b/c bisector creates 2 = parts

$$9x - 1 = 8x + 2$$

$$x = 3$$

$$AC = 2 \cdot AB$$

$$AB = 9(3) - 1 = 26$$

$$AC = 2 \cdot 26 = \boxed{52}$$

④ b) $2 \cdot BC = AC$ b/c bisector creates 2 = parts

$$2(2x - 1) = 3x + 14$$

$$4x - 2 = 3x + 14$$

$$x = 16$$

$$AB = BC$$

$$AB = 2(16) - 1 = \boxed{31 = BC}$$

⑤ c) $m\angle ABE = m\angle DBC$ b/c vert \angle 's are =

$$10x + 33 = 12x + 14$$

$$2x = 19$$

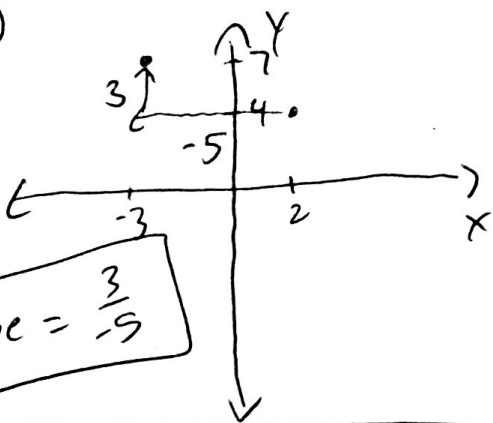
$$x = 9.5$$

$\angle ABD$ and $\angle DBC$ are lin pair (supp)

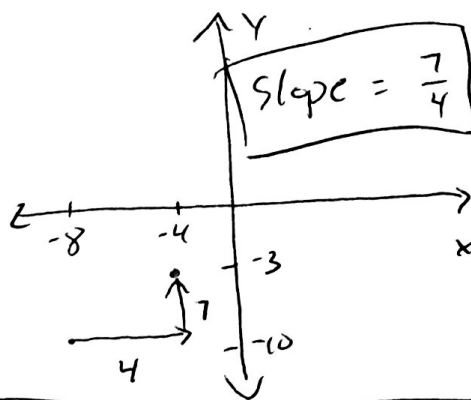
$$\angle DBC = 12(9.5) + 14 = \cancel{128}^\circ$$

$$\angle ABD = 180 - \cancel{128}^\circ = \boxed{52^\circ}$$

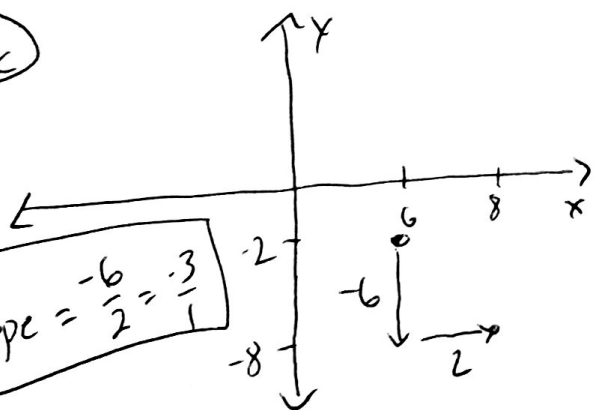
3a



3b



3c



④ $AB + BC = AC$ b/c sum of parts = whole

$$2x - 1 + 4x = 7x - 4$$

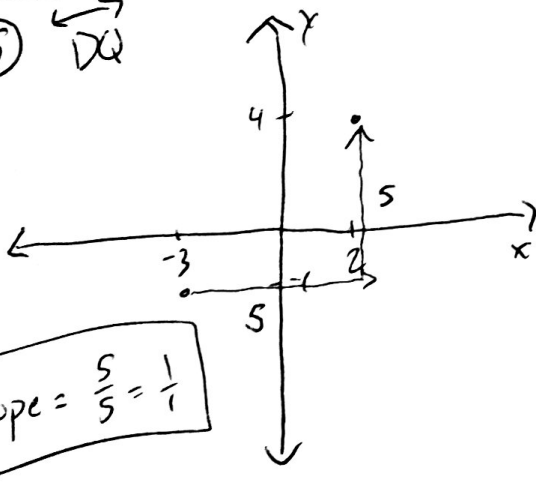
$$6x - 1 = 7x - 4$$

$$x = 3$$

$$AD = 8(3) - 1 = \boxed{23} \quad AC = 7(3) - 4 = \boxed{17}$$

$$AD - AC = CD \quad 23 - 17 = \boxed{6}$$

⑤ \overleftrightarrow{DW}



\overleftrightarrow{WT}

