

## Review WS - 2.5 & 2.6 Proofs

### ① Statements

1.  $3x - 4 = \frac{1}{2}(x + 12)$
2.  $3x - 4 = \frac{1}{2}x + 6$
3.  $\frac{5}{2}x - 4 = 6$
4.  $\frac{5}{2}x = 10$
5.  $x = 4$

### Justification

1. Given
2. Dist. Prop.
3. Subst. Prop. of Eq.
4. Add. Prop. of Eq.
5. Mult. Prop. of Eq.

### ② Statements

1.  $DE = \frac{1}{3}x + 1$
2.  $EF = 7$
3.  $DF = 11$
4.  $DE + EF = DF$
5.  $\frac{1}{3}x + 1 + 7 = 11$
6.  $\frac{1}{3}x + 8 = 11$
7.  $\frac{1}{3}x = 3$
8.  $x = 9$

### Justification

1. Given
2. Given
3. Given
4. Seg. add Postulate
5. Substitution Prop of Eq.
6. Simplify
7. Subst. Prop. of Eq.
8. Mult. Prop. of Eq.

### ③ Statements

1.  $2x^2 - 3x - 16 = -x^2 - (3x + x^2)$
2.  $2x^2 - 3x - 16 = -x^2 - 3x - x^2$
3.  $2x^2 - 3x - 16 = -2x^2 - 3x$
4.  $2x^2 - 16 = -2x^2$
5.  $-16 = -4x^2$
6.  $4 = x^2$
7.  $x = 2$  or  $x = -2$
8.  $x = -2$

### Justification

1. Given
2. Distributive Prop.
3. Simplify
4. Add Prop of Eq.
5. Subst. Prop of Eq.
6. Div. Prop. of Eq.
7. Def. of Sq. root
8. OR Rule

\* Geometric Proofs on Quiz will be more difficult.  
Review your packet as well!

④ Statements

Justifications

1.  $AD = 2AB + BC$
2.  $AB + BC + CD = AD$
3.  $2AB + BC = \overset{AD}{AB} + \overset{AB + BC + CD}{BC} + CD$
4.  $2AB = AB + CD$
5.  $AB = CD$
6.  $\overline{AB} \cong \overline{CD}$

1. Given
2. seg. add Postulate  $\rightarrow$  Symm. prop of =
3. substitution prop. of Eq.
4. sub. Prop. of Eq
5. sub. Prop. of Eq
6. Def of cong. seg

⑤ Statements

Justifications

1.  $\angle 1$  and  $\angle 2$  form a Lin Pair
2.  $\angle 1$  and  $\angle 2$  are supp  $\angle$ s
3.  $m\angle 1 + m\angle 2 = 180^\circ$
4.  $m\angle 2 + m\angle 3 + m\angle 4 = 180^\circ$
5.  $m\angle 1 + m\angle 2 = m\angle 2 + m\angle 3 + m\angle 4$
6.  $m\angle 1 = m\angle 3 + m\angle 4$

1. Given
2. Lin Pair Thm
3. Def. of supp  $\angle$ s
4. Given
5. substitution prop of Eq
6. sub. Prop of Eq

⑥ Statements

Justifications

1.  $\angle AEC \cong \angle DEB$
2.  $m\angle AEB + m\angle BEC = m\angle AEC$
3.  $m\angle BEC + m\angle CED = m\angle DEB$
4.  $m\angle AEB + m\angle BEC = m\angle BEC + m\angle CED$
5.  $m\angle AEB = m\angle CED$
6.  $\angle AEB \cong \angle CED$

1. Given  $\rightarrow$  Def of cong angles
2. ang add Postulate
3. ang. add Postulate
4. Substitution Prop of Eq
5. sub. Prop of Eq
6. Def of cong. angles