

Review WS - 2.15: 2.1e 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. Sub. 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. Sub. 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. $\rightarrow x < 0$
 $x = -2$

Justification

1. Given
2. Distributive Prop.
3. Simplify
4. Add Prop of Eq.
5. Sub. Prop of Eq.
6. Div. Prop. of Eq.
7. Def. of Sq. root
8. ~~OR~~ ^{Given} Rule

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

④ Statements

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

Justifications

1. Given
2. seg. add Postulate
3. substitution prop. of Eq.
4. sub. Prop. of Eq
5. sub. Prop. of Eq
6. Def of cong. seg

⑤ Statements

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. $m\angle 1 = m\angle 3 + m\angle 4$

Justifications

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

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. $\angle AEB \cong \angle CED$

Justifications

1. Given \leftarrow 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