

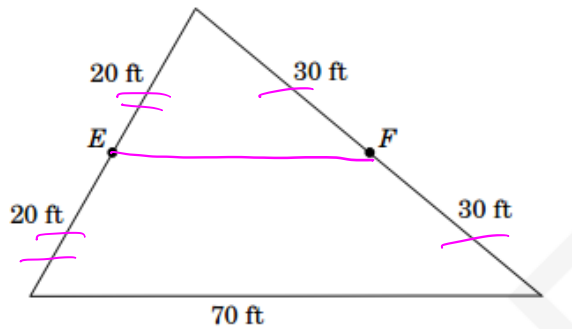
Triangle Congruence: Final Exam Prep

Math II

Name: _____

Directions: The following questions are sample items similar to those found on the NC Final Exam. Answer each to the best of your ability.

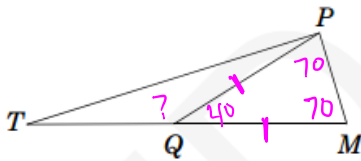
1. How long is \overline{EF} ?



- A 20 ft
- B 25 ft
- C 30 ft
- ☒ D 35 ft

$$EF = \frac{1}{2}(70)$$

2. In the diagram below, $\overline{PQ} \cong \overline{MQ}$ and $m\angle M = 70$.

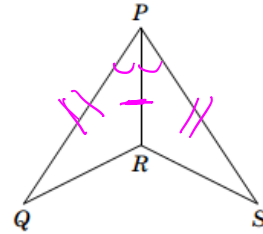


What is $m\angle TQP$?

- A 70
- B 110
- ☒ C 140
- D 150

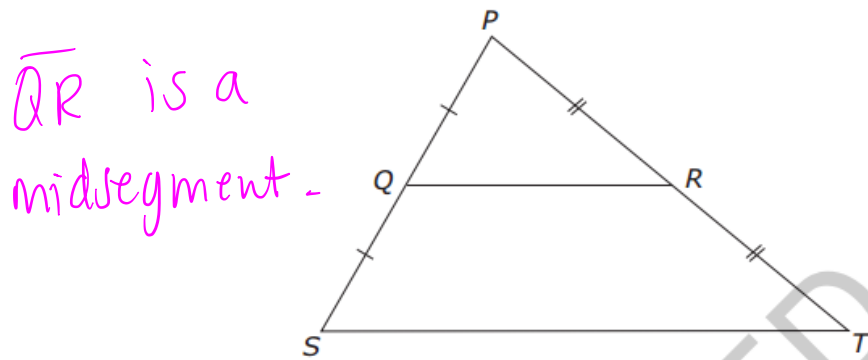
$$m\angle TQP = 180 - 40 = 140$$

3. Which parts must be congruent to prove $\triangle PQR \cong \triangle PSR$ by SAS?



- ☒ A $\angle Q \cong \angle S$ and $\overline{QP} \cong \overline{SP}$
- ☒ B $\angle Q \cong \angle S$ and $\overline{QR} \cong \overline{SR}$
- ☒ C $\angle QRP \cong \angle SRP$ and $\overline{QP} \cong \overline{SP}$
- ☒ D $\angle QPR \cong \angle SPR$ and $\overline{QP} \cong \overline{SP}$

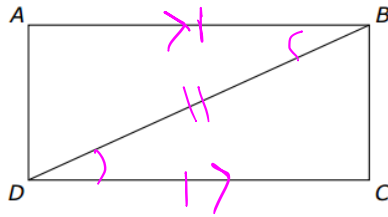
4. Which statement must be true about the triangle below?



\overline{QR} is a midsegment.

- ☒ A $PQ + QS = PR + RT$
- ☒ B $\triangle PQR \cong \triangle PST$
- ☒ C $ST = 2 \cdot QR$
- ☒ D $\angle S \cong \angle T$

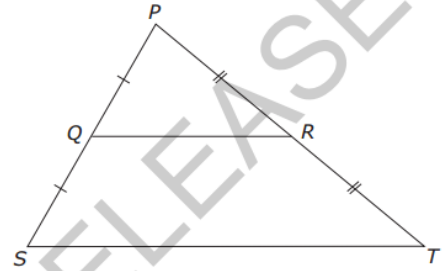
5. Quadrilateral $ABCD$ is shown below.



If $\overline{AB} \parallel \overline{CD}$ and $\overline{AB} \cong \overline{CD}$, which is a reason for $\triangle ABD \cong \triangle CDB$?

- ☒ A Side-Angle-Side Postulate
- ☐ B Angle-Angle Postulate
- ☐ C Hypotenuse-Leg Theorem
- ☐ D Angle-Angle-Side Theorem

6. In the drawing below, $QR = (3x + 6)$ and $ST = (12x - 6)$.

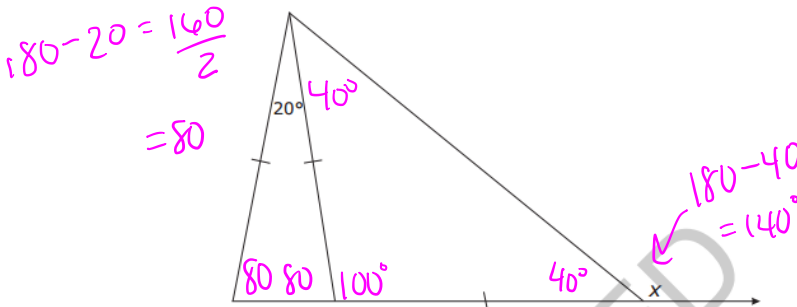


What is the length of \overline{ST} ?

- ☐ A 3
- ☐ B 10
- ☐ C 15
- ☒ D 30

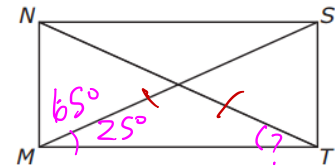
$$\begin{aligned} 2QR &= ST \\ 6x + 12 &= 12x - 6 \\ 18 &= 6x \\ x &= 3 \\ ST &= 12(3) - 6 \end{aligned}$$

7. In the diagram below, what is the value of x ?



- ☐ A 100°
- ☐ B 120°
- ☒ C 140°
- ☐ D 160°

8. In the figure below, $NTSM$ is a rectangle and $m\angle SMN = 65$.

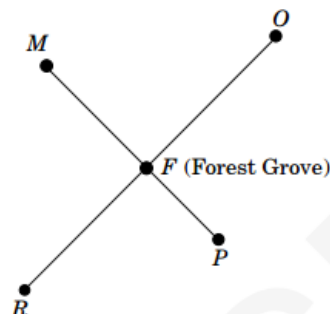


What is $m\angle NTM$?

- ☐ A 12.5
- ☒ B 25
- ☐ C 50
- ☐ D 65

$$90 - 65 = 25$$

9. According to the map, the road connecting the cities of Oakton (O) and Ridgeton (R) intersects the road connecting Maple View (M) and Pineville (P).



If the roads intersect in the town of Forest Grove (F) in the diagram, which statement is **always** true?

- ☒ A $MP = RO$
- ☐ B $\overline{PF} \perp \overline{OF}$
- ☒ C $\angle OFP \cong \angle RFM$
- ☐ D $\angle RFP \cong \angle MFR$

Vertical angles