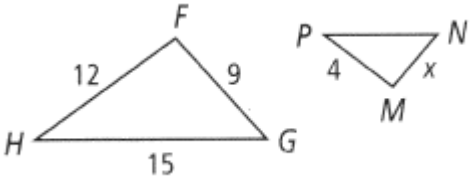
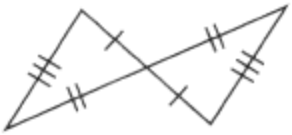
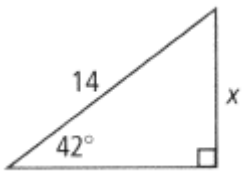
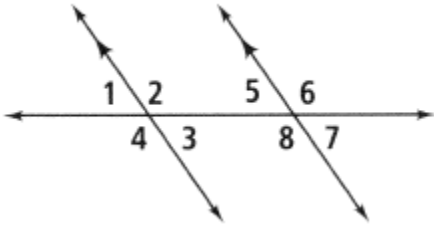
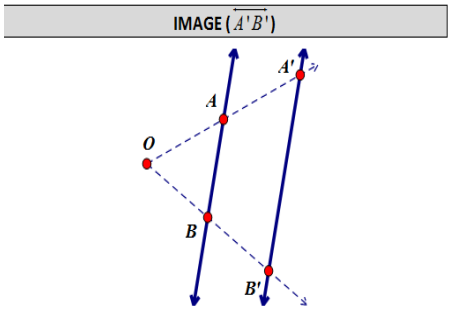
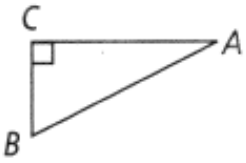
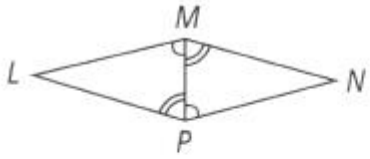
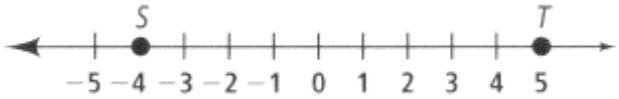
Name _____ **Date Due:** _____

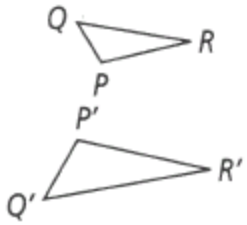
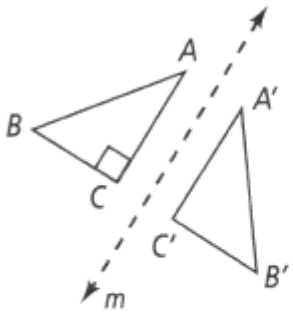
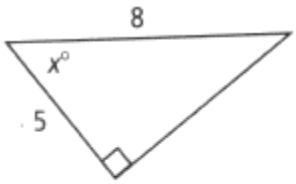
Geometry Regents Review #6

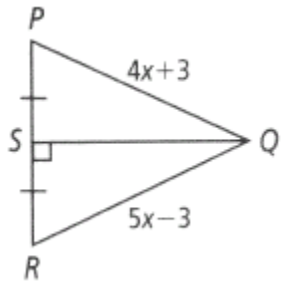
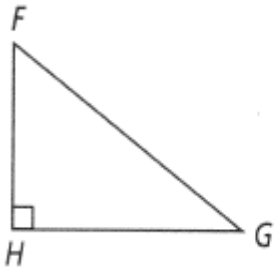
Directions: ***Answer ALL questions. Show ALL work in column 2.***
If there is no mathematical work to be shown, write an explanation or definition to support your answer! This counts as a quiz grade!!! (20 pts.)

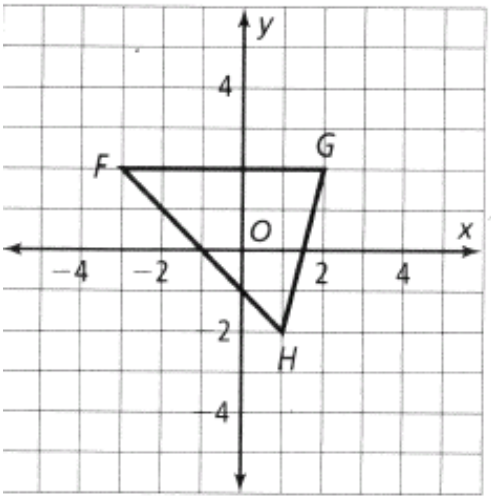
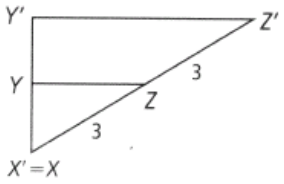
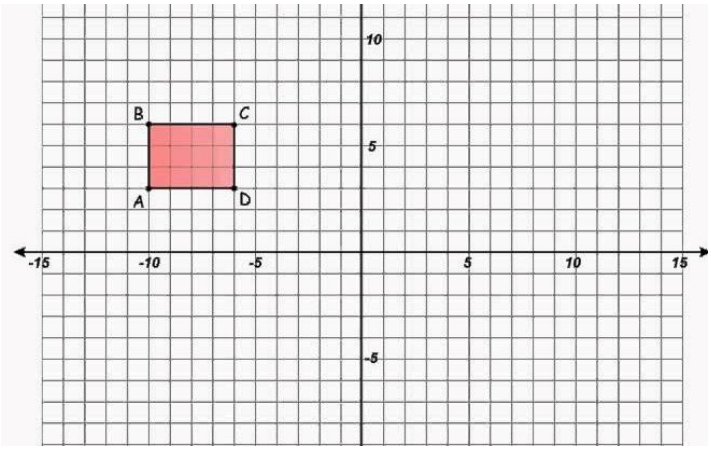
1. What value of x makes ΔFGH similar to ΔMNP?  A) 3 B) 3.75 C) 5.3 D) 27	***Explain or show work!***
2. Which **theorem(s)** can you use to prove that the two triangles are congruent?  A) ASA B) AAS C) SSS D) SAS	***There may be more than one possible answer!***
3. Which **equation(s)** can be used to find the value of x?  **A** $\cos 48^\circ = \frac{x}{14}$ **B** $\sin 42^\circ = \frac{x}{14}$ **C** $\cos 42^\circ = \frac{14}{x}$ **D** $\sin 48^\circ = \frac{x}{14}$	***Explain or show work!***
4. ***Choose all angle pairs*** that are congruent.  **A** ∠1 and ∠5 **B** ∠1 and ∠6 **C** ∠2 and ∠8 **D** ∠4 and ∠6	***Explain or show work!***

5. A dilation maps A, A', and B onto B' respectively. Choose all of the true statements.  **A The scale factor is ½.** **B** $\overline{AB} \parallel \overline{A'B'}$ **C** $\Delta AOB \cong \Delta A'OB'$ **D** $\frac{OB}{OB'} = \frac{OA}{OA'}$	***Explain or show work!***
6. Which **equation(s)** represents a line that contains the point (-8. 3) and is perpendicular to y = 4x – 7. **A** $y = 4x - 20$ **B** $x + 4y = 4$ **C** $y = -\frac{1}{4}x + 1$ **D** $y = -\frac{1}{4}x + 35$	***Explain or show work!***
7. Which **statement(s)** are true?  **A** $\cos A = \sin B$ **B** $\sin A = \cos A$ **C** $\sin A = \cos B$ **D** $\tan A = \tan B$	***Explain or show work!***

8. What are all of the correct ways to describe why the triangles below are congruent?  **A** ASA Congruence Theorem **B** A reflection of $\triangle MNP$ across $\overline{MP}$ is a rigid motion that maps $\triangle MNP$ onto $\triangle PLM$. **C** A translation, followed by a reflection, and then another translation is a series of rigid motions that will map $\triangle MNP$ onto $\triangle PLM$. **D** A rotation of $\triangle MLP$ about point M, followed by a translation is a series of rigid motions that maps $\triangle MLP$ onto $\triangle PNM$.	***Explain or show work!***
9. **What are all the possible coordinates** for point M such that SM = ½ MT?  **A** -13 **B** -2 **C** -1 **D** 13	***Explain or show work!***
10. A lifeguard sits on the shore in a chair that is 6 ft. above the ground. She sees a swimmer at an angle of depression of about 10^o. About how far away from the shore is the swimmer? A) 6.1 ft B) 34.0 ft. C) 34.6 ft. D) 95.1 ft.	***Explain or show work!***

11. Which of the following statements is suffficient to show that a similarity transformation exists that maps ΔPQR to ΔP'Q'R'?  **A** $\angle P \cong \angle P'$ and $\angle Q \cong \angle Q'$ **B** $\overline{PR} \cong \overline{P'R'}$ **C** $\frac{PQ}{QR} = \frac{P'Q'}{Q'R'}$ **D** $QP = Q'P'$ and $QR = Q'R'$	***Explain or show work!***
12. ΔABC is reflected across line m. **Which statement(s)** are true?  **A** $\overline{A'C'}$ is perpendicular to $\overline{C'B'}$. **B** $AB = A'B'$ **C** $m\angle A = m\angle A'$ **D** $CC' = BB'$	***Explain or show work!***
13. Find the value of x to the nearest tenth.  **A** 32.0 **C** 51.3 **B** 38.7 **D** 58	***Explain or show work!***

14. Find the value of x. $Sin(3x+7) = Cos(15x-29)$	***Explain or show work!***
15. If an angle of one triangle is congruent to an angle of a second triangle, and the sides that include the two angles are proportional, then what is true about the two triangles? **A** The triangles are similar. **B** The triangles are congruent. **C** The triangles are neither similar nor congruent. **D** There is not enough information to make a determination.	***Explain or show work!***
16. What is the length of $\overline{PQ}$?  A) 24 B) 27 C) 30 D) 32	***Explain or show work!***
17. If $\sin F = \frac{3}{5}$, what is $\cos G$?  	***Show work!***

18. What are the vertices of $T_{<3,-1>}(\triangle FGH)$? Graph the image of $\triangle FGH$.  	***Show the graph of the image of triangle FGH and write the coordinates.*** F'=_____ G'=_____ H'=_____
19. Is $D_{(n,X)}(\triangle XYZ) = \triangle X'Y'Z'$ an enlargement or a reduction? What is the scale factor n of the dilation?  	***Explain or show work!***
20. Dilate ABCD by a scale factor of 2 with its center of dilation at (-2,3) and state the new coordinates.  	***Show work on the graph.*** ***A'=_____ B'=_____*** ***C'=_____ D'=_____***