Handout 3: Perpendicular, Shmerpendicular Answers

1. What is so special about perpendicular lines?

   They intersect at a 90° angle exactly.

2. If two lines are perpendicular, they must be coplanar. Is this true or false?

   True.

3. How many right angles do 2 perpendicular lines make?

   Four.

4. If $t \parallel u$, $v \perp u$, and $w \perp v$, then how many total right angles are formed?

   12.

5. If $r \perp s$ and $t \perp r$, what more can we conclude about these lines?

   $t \parallel s$.

6. If $a \perp c$ and $b \parallel c$, what more can we conclude about these lines?

   $a \perp b$.

7. Line p has the equation $y = 3x - 6$. If line q is perpendicular to line p and passes through $(0, -3)$, what is the equation of line q?

   $y = -\frac{1}{3}x - 3$

8. Line p has the equation $27x + 108y = 216$. If line q is perpendicular to p and passes through $(4, 15)$, what is the equation of line q?

   $y = 4x - 1$

9. Line p has coordinates $(12, 3)$ and $(4, 1)$. If Line q is perpendicular to p and passes through $(8, -4)$, what is the equation of line q?

   $y = -4x + 28$

10. Line p has coordinates at $(0, 1)$ and $(1, 0)$. If $q \perp p$, $r \perp q$, and r and q intersect at point $(2, 7)$, what is the equation of line r?

    $y = -x + 9$