GEO Unit 3 Review Packet Answers

1. $\overline{BF}$ and $\overline{CD}$
**several possible answers

2. $\overline{BF} \perp \overline{FC}$
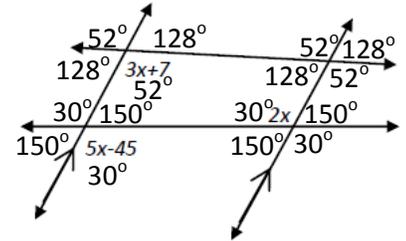**several possible answers

3. $\overleftrightarrow{BC} \parallel \overleftrightarrow{AD}$

4. plane BCF and plane ADE

5. $x = 13$; all $71°$ or $109°$

6. $x = 15$ NOTE: Not to scale!

7. (4) $d \parallel e$
(fill in drawing to determine a set of supplementary same side interior angles or congruent alt int/alt ext/corresponding angles)

8. $x = 7 \quad y = 5$

9. a = $40°$
(draw in auxiliary parallel lines to get same side interior supp ∡'s and ≅ alt interior ∡'s and use sum of adjacent angles at a point = $360°$)

10. Neither – slopes only unequal $(\frac{3}{4} \neq -\frac{1}{2})$

11. $\perp$ - slopes are opposite reciprocals $(\frac{1}{3} \ \& \ \frac{-3}{1})$

12. $\parallel$ - slopes are equal $(\frac{4}{1} = \frac{4}{1})$

13. $\parallel$ line: $y + 2 = 2(x - 4)$
OR
$y = 2x - 10$
$\perp$ line: $y + 2 = -\frac{1}{2}(x - 4)$
OR
$y = -\frac{1}{2}x$

14. $\parallel$ line: $y - 14 = -\frac{6}{5}(x - 15)$
OR
$y = -\frac{6}{5}x + 32$
$\perp$ line: $y - 14 = \frac{5}{6}(x - 15)$
OR
$y = \frac{5}{6}x + \frac{3}{2}$

15. Point-Slope: $y - 7 = 0(x - 3)$
Slope-Intercept: $y = 0x + 7$
(both simplify to y=7)

16. Point-Slope: $y + 5 = -\frac{8}{5}(x - 1)$
Slope-Int: $y = -\frac{8}{5}x - \frac{17}{5}$

17. Pt-Slope: $y - 0 = 1(x + 1)$
Slope-Intercept: $y = x + 1$
(both simplify to same)

18. $x = -3$
No, you cannot write this in either point-slope or slope-intercept form because there is an undefined slope so it can only be written as x=constant (there cannot be a y term).

19. Coincident
Because the two lines have the same equation with the same slopes $\frac{2}{1}$ and y-intercepts (0,10), they coincide.

20. Intersecting
The lines do not have equal slope, so they are not parallel. Since they are not parallel they will eventually intersect.

21. Perpendicular
These lines have slopes that are negative reciprocals of each other therefore, they are perpendicular.

22.

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| 1. Given |
| 2. Definition of a linear pair (2 adjacent angles whose non-common sides form opposite rays are a linear pair) |
| 3. Linear pair of congruent angles → perpendicular lines |
| 4. Given |
| 5. 2 lines perpendicular to the same line are parallel to each other |

23.

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|---|
| 1. Given |
| 2. A line perpendicular to 1 of 2 parallel lines is perpendicular to the other |
| 3. Given |
| 4. 2 lines perpendicular to the same line are parallel to each other (Parallel lines are perpendicular to the same line) |

24.

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1. $l \parallel m$	1. Given
2. $\angle 2\ and\ \angle 1$ are corresponding $\angle$s	2. Defn of corresponding angles
3. $\angle 2 \cong \angle 1$	3. Parallel lines → congruent corresponding angles
4. $\angle 1 \cong \angle 3$	4. given
5. $\angle 2 \cong \angle 3$	5. Transitive (step 3 → 4) OR Substitution (step 3 into 4)
6. $\angle 2\ and\ \angle 3$ alt int $\angle$s	6. Defn of alternate interior angles
7. $q \parallel p$	7. Congruent alternate interior angles →parallel lines

25.
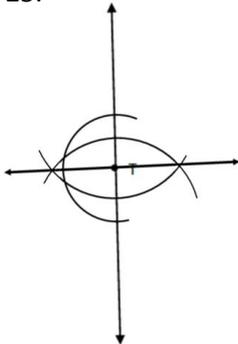
27. Copy corresponding angle:
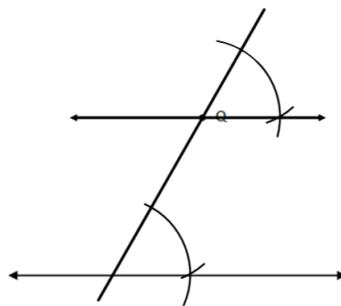
2 lines perpendicular
to the same line:
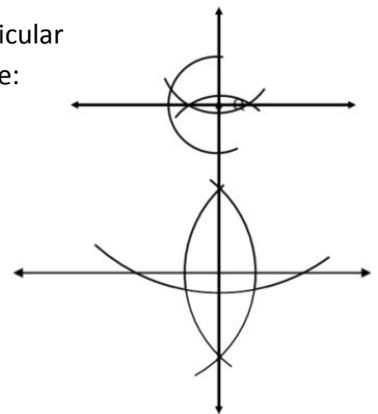
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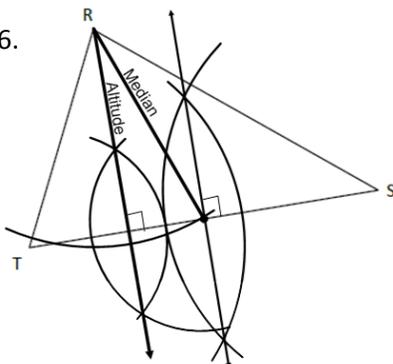
28.   A. $y - 5 = -\frac{4}{3}(x + 2) or\ y + 3 = -\frac{4}{3}(x - 4)$

Reflection into y-axis →A'(-2,5) & B'(4,-3)

B. $y - 3 = \frac{4}{3}(x - 6) or\ y + 5 = \frac{4}{3}(x - 0)\ or\ y = \frac{4}{3}x - 5$

Translation of right 4 and down 2 → A'(6,3) & B'(0,-5)