GLY 4200C NAME_____
HOMEWORK 3

MILLER INDICES AND ZONE AXES

Calculate Miller Indices, given the following intercepts:

1. a' = 3 b' = 2 c' = 4

Answer _____

2. a' = 2 b' = 3 c' = 1

Answer _____

3. a' = 0.5 b' = -2 c' = ∞

Answer _____

4. a’ = $0.3\overline{3}$ b’ = 1 c’ = 0.5

Answer _____

5. a’ = 0.5 b’ = - 0.25 c’ = $0.3\overline{3}$

Answer _____

6. a’ = ∞ b’ = 2 c’ = ∞

Answer _____

7. a’ = -3 b’ = 1 c’ = 2

Answer _____

8. a’ = 1 b’ = 5 c’ = 2

Answer _____

9. a’ = 6 b’ = 4 c’ = 2

Answer _____

Calculate Miller Indices from the following X-ray data:

Sylvite, **a** = 0.6293 nm, KCl, isometric

10. x' = 1.2568 nm
y' = 0.3145 nm
z' = ∞

Answer _____

Topaz a = 0.465 nm, **b** = 0.880, **c** = 0.840, $Al_2SiO_4(F,OH)_2$, orthorhombic

11. x' = 0.930 nm
    y' = -0.883 nm
    z' = 0.418 nm

Answer _____

12. x' = ∞
    y' = 0.439nm
    z' = 0.842 nm

Answer _____

13. x' = 0.234 nm
    y' = 0.443 nm
    z' = 1.259 nm

Answer _____

Cassiterite, **a** = 0.473 nm, **c** = 0.318 nm, SnO_2, tetragonal

14. x' = 0.473 nm
    y' = 1.183 nm
    z' = -0.932 nm

Answer _____

15. x' = 0.710 nm
y' = -0.472 nm
z' = 0.639 nm

Answer _____

Calculate the zone axis of each of the following pairs of planes:

16. (002), (010)

Answer _____

17. (321), (13$\bar{2}$)

Answer _____

18. (201), (012)

Answer _____

19. (2$\bar{1}$0), (021)

Answer _____

20. (1$\bar{2}$2), (122)

Answer _____