

## Topic 4: Mendelian Genetics

### Level 2

1. D
2. A
3. B
4. A
5. D
6. A
7. A
8. D
9. A
10. B
11. B
12. D
13. C
14. B
15. D
16. B
17. A
18. A
19. D
20. B
21. D
22. B
23. C
24. C

### Additional Sample Problems

1. Albino (b) is recessive; black (B) is dominant. First cross: BB x bb; gametes B and b; offspring Bb  
Second cross: Bb x bb; gametes  $\frac{1}{2}$  B and  $\frac{1}{2}$  b (heterozygous parent) and b; offspring  $\frac{1}{2}$  Bb and  $\frac{1}{2}$  bb
2. 9:3:3:1
3. Parental cross: AAC<sup>R</sup>C<sup>R</sup> x aaC<sup>w</sup>C<sup>w</sup>. F1 genotype is AaC<sup>R</sup>C<sup>w</sup>, phenotype is all axial pink. F2 phenotypes are 3 axial-red:6 axial-pink: 3 axial-white: 1 terminal-red: 2 terminal-pink: 1 terminal-white

### Grid-Ins

1. 12
2.  $\frac{3}{8}$
3. 17%