

# MHS

## Applied Math

Exam to go from grade 11  
to grade 12

## Sample Questions

**ANSWERS**

**ANSWERS:**

1. Option 3
2. Option 2
3. Option 2
4. Option 2
5. Option 1
  
6.  $\mathbf{q} = (15.1 \text{ m}, 187.6^\circ)$
7.  $\mathbf{d} = (-70.1\mathbf{i} + 33\mathbf{j}) \text{ m}$
8. Bearing of  $355^\circ$
9. 29.2 m
10. Option 2
  
11. Option 2
12. 3.1 m down
13. 40 s
14.  $5 \text{ ms}^{-1}$
15.  $6 \text{ ms}^{-2}$
  
16. 343 m
17. 17 s
18. Option 3
19. 368.6 m
20. 4,486.4 m
  
21. Option 3
22.  $8 \text{ ms}^{-1}$  East
23. Option 2
24.  $\begin{pmatrix} 3 \\ 22 \end{pmatrix} \text{ km OR } (3\mathbf{i} + 22\mathbf{j}) \text{ km}$
25.  $\begin{pmatrix} 0 \\ -6 \end{pmatrix} \text{ ms}^{-1} \text{ OR } (0\mathbf{i} - 6\mathbf{j}) \text{ ms}^{-1}$

26.  $10 \text{ ms}^{-1}$
27. W57.7N OR N32.3W
28.  $\begin{pmatrix} -5 \\ -3 \end{pmatrix} \text{ ms}^{-2} \text{ OR } (-5\mathbf{i} - 3\mathbf{j}) \text{ ms}^{-2}$
29. Option 2
30. Bearing of  $230.5^\circ$
  
31. Option 3
32. Option 2
33. Option 1
34. Option 3
35. Option 2
  
36. Option 1 Yes; Option 2 Yes;  
Option 3 No; Option 4 Yes;  
Option 5 Yes.
37. 10 Hz
38. Option 2
39. 4 s
40. Option 3
  
41. Option 2
42. Option 2
43. Option 2
44. 3.3 N
45. 204.3 N
  
46. Option 1 False; Option 2 True;  
Option 3 True.
47. 127.4 N downwards
48. 245 N
49. Option 1
50. 19.6 N
  
51. Option 1
52. 0.625