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NPTEL

Courses » **Hydrostatics and Stability**

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Unit 8 - Week 7
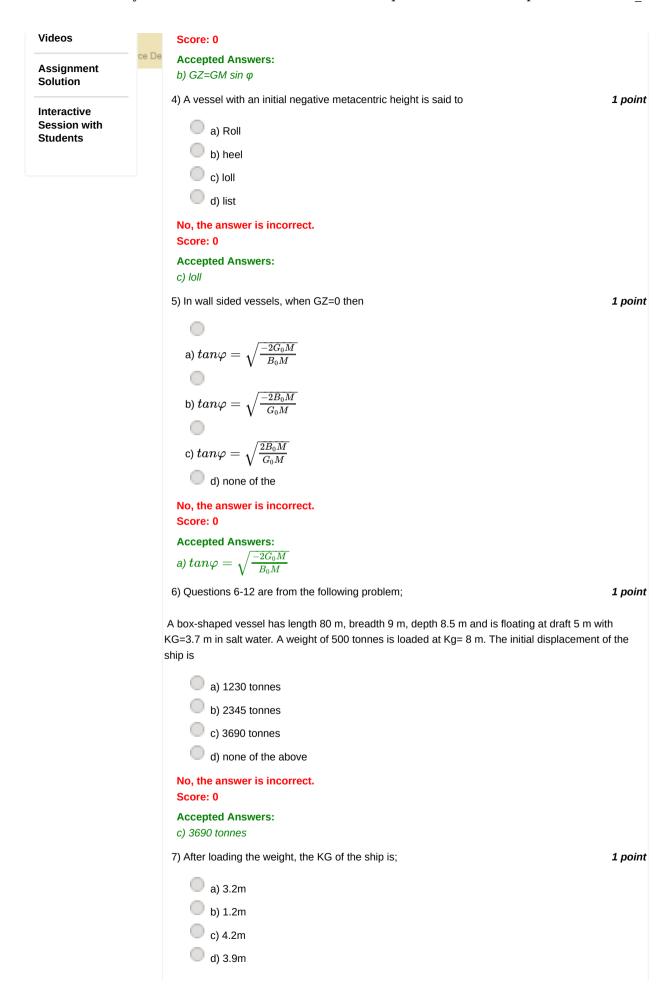
Course outline

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Week 7

- Lecture 19 : Dynamical Stability - III
- Lecture 20 : Discussion
- Lecture 21 : Righting Stability - I
- Quiz : Week 7 Assignment
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Week 7 Assignment

The due date for submitting this assignment has passed.
As per our records you have not submitted this assignment.   **Due on 2018-09-19, 23:59 IST.**

1) The formula to calculate GZ values from the KN curves is   *1 point*

- a) GZ=KN-KGsinφ
- b) GZ=KN-KMsinφ
- c) GZ=KM-KNsinφ
- d) none of the above

No, the answer is incorrect.
Score: 0

Accepted Answers:
a) GZ=KN-KGsinφ

2) The wall-sided formula states that   *1 point*

- a) $GZ = sin\varphi(GM + \frac{1}{2}B_0 M tan^2\varphi)$

- b) $GZ = sin\varphi(GM + \frac{1}{2}B_0 M cot^2\varphi)$

- c) $GZ = GM cos\varphi$

- d) none

No, the answer is incorrect.
Score: 0

Accepted Answers:
a) $GZ = sin\varphi(GM + \frac{1}{2}B_0 M tan^2\varphi)$

3) At small values of φ, the above formula reduces to   *1 point*

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**Assignment
Solution**

**Interactive
Session with
Students**

Score: 0

Accepted Answers:
b) GZ=GM sin φ

4) A vessel with an initial negative metacentric height is said to   *1 point*

   ○ a) Roll

   ○ b) heel

   ○ c) loll

   ○ d) list

No, the answer is incorrect.
Score: 0

Accepted Answers:
c) loll

5) In wall sided vessels, when GZ=0 then   *1 point*

   ○

   a) $tan\varphi = \sqrt{\frac{-2G_0M}{B_0M}}$

   ○

   b) $tan\varphi = \sqrt{\frac{-2B_0M}{G_0M}}$

   ○

   c) $tan\varphi = \sqrt{\frac{2B_0M}{G_0M}}$

   ○ d) none of the

No, the answer is incorrect.
Score: 0

Accepted Answers:
a) $tan\varphi = \sqrt{\frac{-2G_0M}{B_0M}}$

6) Questions 6-12 are from the following problem;   *1 point*

 A box-shaped vessel has length 80 m, breadth 9 m, depth 8.5 m and is floating at draft 5 m with
KG=3.7 m in salt water. A weight of 500 tonnes is loaded at Kg= 8 m. The initial displacement of the
ship is

   ○ a) 1230 tonnes

   ○ b) 2345 tonnes

   ○ c) 3690 tonnes

   ○ d) none of the above

No, the answer is incorrect.
Score: 0

Accepted Answers:
c) 3690 tonnes

7) After loading the weight, the KG of the ship is;   *1 point*

   ○ a) 3.2m

   ○ b) 1.2m

   ○ c) 4.2m

   ○ d) 3.9m

No, the answer is incorrect.
Score: 0

Accepted Answers:
c) 4.2m

8) The draft of the vessel after loading is;   *1 point*

⚪ a) 5.7m

⚪ b) 2.4m

⚪ c) 3.3m

⚪ d) 4.6m

No, the answer is incorrect.
Score: 0

Accepted Answers:
a) 5.7m

9) KM of the ship after loading is   *1 point*

⚪ a) 4.98m

⚪ b) 4.03m

⚪ c) 1.33m

⚪ d) 5.25m

No, the answer is incorrect.
Score: 0

Accepted Answers:
b) 4.03m

10) $G_0 M$ of the vessel after loading is   *1 point*

⚪ a) -0.185m

⚪ b) -0.98m

⚪ c) 0.743m

⚪ d) none of the above

No, the answer is incorrect.
Score: 0

Accepted Answers:
a) -0.185m

11) The loll angle of the ship after loading weight is   *1 point*

⚪ a) 12 ^{o}

⚪ b) 29.1 ^{o}

⚪ c) 45°

⚪ d) none of the above

No, the answer is incorrect.
Score: 0

Accepted Answers:
b) 29.1 ^{o}

12) GM at the angle of loll will be   *1 point*

⚪ a) 0.34m

b) 0.42m

c) 0.12m

d) none of the above

No, the answer is incorrect.
Score: 0

Accepted Answers:
b) 0.42m

13) A vessel has displacement 25000 tonnes KG 10.6m, KM 12.0 m, KB 6.1 m. GM of the vessel is   **1 point**

a) 1.4 m

b) 2.4 m

c) 3.2m

d) 1.8m

No, the answer is incorrect.
Score: 0

Accepted Answers:
a) 1.4 m

14) BM of the vessel in Question 13 is   **1 point**

a) 1.9m

b) 2.4 m

c) 5.9 m

d) 4.2m

No, the answer is incorrect.
Score: 0

Accepted Answers:
c) 5.9 m

15) If the vessel in Question 13 is wall-sided, its GZ at 5 $^\circ$ heel is given by   **1 point**

a) 0.224 m

b) 0.124m

c) 0.190 m

d) none of the above

No, the answer is incorrect.
Score: 0

Accepted Answers:
b) 0.124m

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