

## MTH 211, Math for Architects, Spring 2014

Ayman Badawi

**QUESTION 1. (Haya Alsalama and Zainab Zayed)** Draw a reasonable line segment and call it  $AB$ . Find the mid-point of  $AB$  and call it  $M$ . Draw a semi-circle centered at  $M$  with radius  $|MB|$  (To construct your semi-circle, just take the upper-half of the circle centered at  $M$  with radius  $|MB|$ ). Now construct a right triangle  $MFD$  where  $F$  is a point on  $AB$  (so  $MF$  is the base of the triangle),  $D$  is a point on the semi-circle you constructed (so  $FD$  is the height of the triangle) such that  $|FD| = 2.5|MF|$ . (Only unmarked ruler and a compass are allowed in this construction)

STATE the steps CLEARLY and try to be BRIEF to the point.

**QUESTION 2. (Habib Bitar )** Draw a reasonable line segment and call it  $AB$ . Find the mid-point of  $AB$  and call it  $M$ . Draw a semi-circle centered at  $M$  with radius  $|MB|$  (To construct your semi-circle, just take the upper-half of the circle centered at  $M$  with radius  $|MB|$ ). Now construct a square  $ELFD$  where  $E, L$  are points on  $AB$ ,  $F, D$  are points on the semi-circle you constructed. (Only unmarked ruler and a compass are allowed in this construction)

STATE the steps CLEARLY and try to be BRIEF to the point.

**QUESTION 3. ( Mohamad Latifi and Fatima Al-Awadi)** Draw a reasonable line segment and call it  $AB$ . Find the mid-point of  $AB$  and call it  $M$ . Draw a semi-circle centered at  $M$  with radius  $|MB|$  (To construct your semi-circle, just take the upper-half of the circle centered at  $M$  with radius  $|MB|$ ). Now construct a rectangle  $ELFD$  where  $E, L$  are points on  $AB$  (call  $EL$  the length of the rectangle),  $F, D$  are points on the semi-circle you constructed (Call  $LF$  the width of the rectangle) such that  $|LF| = 0.5|EL|$ . (Only unmarked ruler and a compass are allowed in this construction)

STATE the steps CLEARLY and try to be BRIEF to the point.

**QUESTION 4. (Nasser Alzayani, Xeina AlMalki, Yasmeen Hamouda, and Abdulmalik Ghazzawi )**

Draw a reasonable line segment and call it  $AB$ . Find the mid-point of  $AB$  and call it  $M$ . Draw a semi-circle centered at  $M$  with radius  $|MB|$  (To construct your semi-circle, just take the upper-half of the circle centered at  $M$  with radius  $|MB|$ ). Now construct a rectangle  $ELFD$  where  $E, L$  are points on  $AB$  (call  $EL$  the length of the rectangle),  $F, D$  are points on the semi-circle you constructed (Call  $LF$  the width of the rectangle) such that  $|LF| = 2.5|EL|$ . (Only unmarked ruler and a compass are allowed in this construction)

STATE the steps CLEARLY and try to be BRIEF to the point.

**QUESTION 5. ( Alia Hantash, , Basant ElShimy, and Fay El Mutwalli )**

Draw a reasonable line segment and call it  $AB$ . Find the mid-point of  $AB$  and call it  $M$ . Draw a semi-circle centered at  $M$  with radius  $|MB|$  (To construct your semi-circle, just take the upper-half of the circle centered at  $M$  with radius  $|MB|$ ). Now construct a rectangle  $ELFD$  where  $E, L$  are points on  $AB$  (call  $EL$  the length of the rectangle),  $F, D$  are points on the semi-circle you constructed (Call  $LF$  the width of the rectangle) such that  $|LF| = 2|EL|/3$ . (Only unmarked ruler and a compass are allowed in this construction)

STATE the steps CLEARLY and try to be BRIEF to the point.

**QUESTION 6. ( Mariam Alzaabi, Nada Abushaqra, Hala Aljuboori, and Haia Machfij )**

Draw a reasonable line segment and call it  $AB$ . Find the mid-point of  $AB$  and call it  $M$ . Draw a semi-circle centered at  $M$  with radius  $|MB|$  (To construct your semi-circle, just take the upper-half of the circle centered at  $M$  with radius  $|MB|$ ). Now construct a rectangle  $ELFD$  where  $E, L$  are points on  $AB$  (call  $EL$  the length of the rectangle),  $F, D$  are points on the semi-circle you constructed (Call  $LF$  the width of the rectangle) such that  $|LF| = 8|EL|/5$ . (Only unmarked ruler and a compass are allowed in this construction)

STATE the steps CLEARLY and try to be BRIEF to the point.

**QUESTION 7. ( Rami Abdulhamid and Mohamed saleh )**

Draw a reasonable line segment and call it  $AB$ . Find the mid-point of  $AB$  and call it  $M$ . Draw a semi-circle centered at  $M$  with radius  $|MB|$  (To construct your semi-circle, just take the upper-half of the circle centered at  $M$  with radius  $|MB|$ ). Now construct a rectangle  $ELFD$  where  $E, L$  are points on  $AB$  (call  $EL$  the length of the rectangle),  $F, D$  are points on the semi-circle you constructed (Call  $LF$  the width of the rectangle) such that  $|LF| = 1.5|EL|$ . (Only unmarked ruler and a compass are allowed in this construction)

STATE the steps CLEARLY and try to be BRIEF to the point.

**QUESTION 8. (Nada almulla, Salwa alkhudairi, and Manar kamal)**

Draw a reasonable line segment and call it  $AB$ . Find the mid-point of  $AB$  and call it  $M$ . Draw a semi-circle centered at  $M$  with radius  $|MB|$  (To construct your semi-circle, just take the upper-half of the circle centered at  $M$  with radius  $|MB|$ ). Now construct a rectangle  $ELFD$  where  $E, L$  are points on  $AB$  (call  $EL$  the length of the rectangle),  $F, D$  are points on the semi-circle you constructed (Call  $LF$  the width of the rectangle) such that  $|LF| = 8|EL|/3$ . (Only unmarked ruler and a compass are allowed in this construction)

STATE the steps CLEARLY and try to be BRIEF to the point.

**QUESTION 9. (Jonas)**

Draw a reasonable line segment and call it  $AB$ . Find the mid-point of  $AB$  and call it  $M$ . Draw a semi-circle centered at  $M$  with radius  $|MB|$  (To construct your semi-circle, just take the upper-half of the circle centered at  $M$  with radius  $|MB|$ ). Now construct a rectangle  $ELFD$  where  $E, L$  are points on  $AB$  (call  $EL$  the length of the rectangle),  $F, D$  are points on the semi-circle you constructed (Call  $LF$  the width of the rectangle) such that  $|LF| = |EL| + 0.5|MK|$ , where  $K$  is the point of intersection of the semi-circle with the perpendicular line to  $AB$  at the point  $M$ . (Only unmarked ruler and a compass are allowed in this construction)

STATE the steps CLEARLY and try to be BRIEF to the point.

**Faculty information**

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