

5. Three points given below lie on a circle but unfortunately the circle itself got erased. Reconstruct the circle (in other words, find the centre and the radius of the circle).



Give a brief description of your method for finding the centre of the circle.

UNIVERSITY OF MANITOBA

DATE: February 25, 2010

MIDTERM

PAGE: 1 of 5

COURSE: MATH 1020

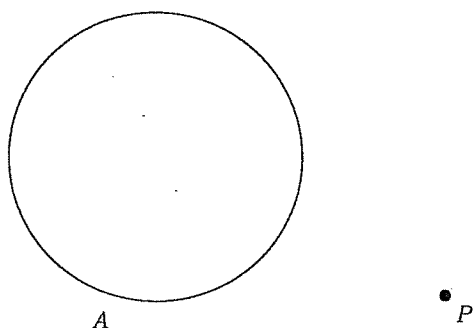
TIME: 70 minutes

EXAMINATION: Math in Art

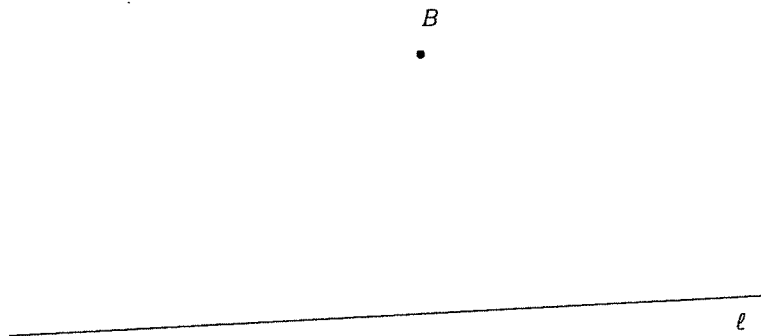
EXAMINER: M. Davidson

*Important:* "Construct" means "construct using an unmarked ruler and compass." The phrase "unmarked ruler" stands for any ruler that may be used only as a straight edge to draw straight line segments. When you use a compass, show the (intermediate) circular arcs you draw in your constructions (do not erase them). Use words to describe BRIEFLY what you have done.

- [6] 1. (a) Find (construct) the center of the circle  $A$  given below. Construct a circle centered at point  $P$  that touches circle  $A$  in exactly one point.



- [4] (b) Draw a line that passes through the point  $B$  and intersects that line  $\ell$  at an angle of 60 degrees.



FA/MATH 1020 Math In Art, Mid\_Term Exam, Oct 18, 2007

NAME \_\_\_\_\_ STUDENT ID# \_\_\_\_\_

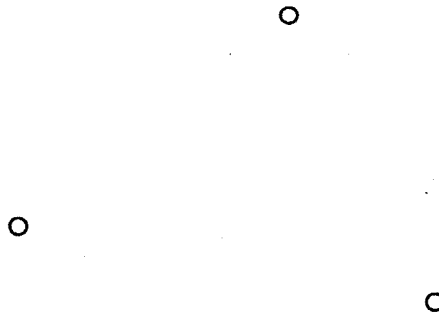
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Time 75 minutes

1. You are given a line segment AB. Divide this line segment into five equal parts by using ruler and compass. Give a brief description of your method.



2. Three points given below lie on a circle but unfortunately the circle itself got erased. Reconstruct the circle using the ruler and compass techniques. Find the centre and the radius of the circle)



136.102 Math in Art  
Midterm Exam  
February 21, 2006

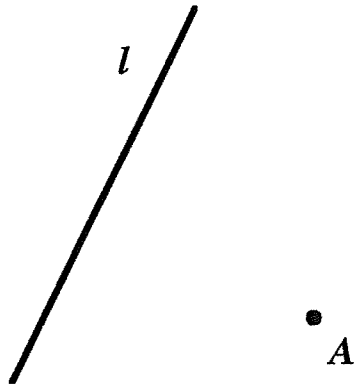
MT2

Name: \_\_\_\_\_

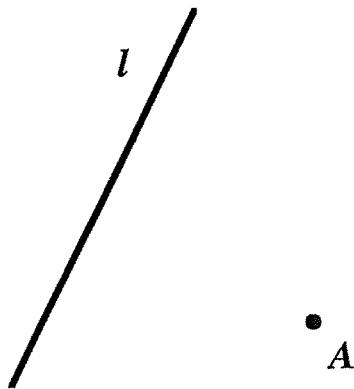
Student Number \_\_\_\_\_

**Important:** "Construct" means "construct using an unmarked ruler and a compass". The phrase "unmarked ruler" stands for any ruler that may be used only as a straight edge to draw straight line segments. When you use a compass, show the (intermediate) circular arcs you draw in your constructions (do not erase them). Use words to describe BRIEFLY what you have done.

1. (a) Construct the line passing through the point  $A$  and parallel to the given line  $l$ .



- (b) Construct a line passing through the given point  $A$  (in the illustration shown below) and intersecting the given line  $l$  at the angle of  $45^\circ$ .



DATE: October 22, 2009

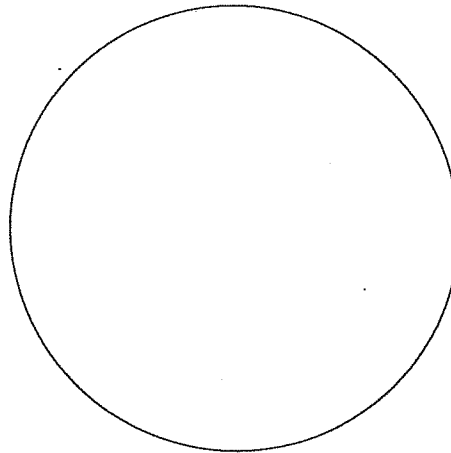
MIDTERM

PAGE: 1 of 5

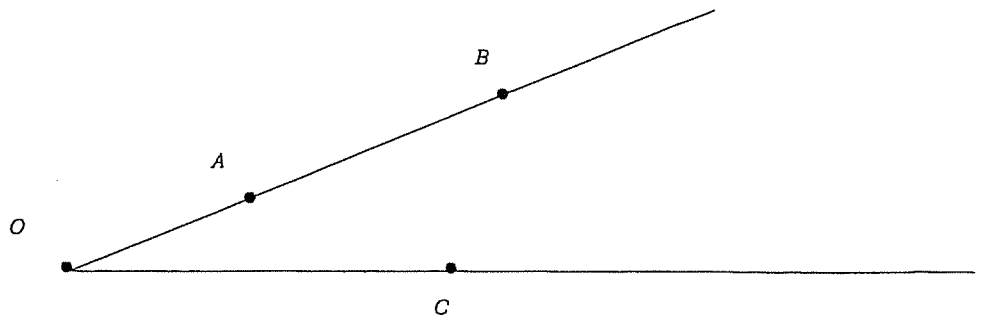
COURSE: MATH 1020TIME: 70 minutesEXAMINATION: Math in ArtEXAMINER: M. Davidson

*Important:* "Construct" means "construct using an unmarked ruler and compass." The phrase "unmarked ruler" stands for any ruler that may be used only as a straight edge to draw straight line segments. When you use a compass, show the (intermediate) circular arcs you draw in your constructions (do not erase them). Use words to describe **BRIEFLY** what you have done.

- [5] 1. (a) Find (construct) the center of the circle given below. Construct a hexagon in the circle.



- [5] (b) Given the diagram below; If  $OA$  has length 1,  $OB$  has length  $n$  and  $OC$  has length  $m$ , find the point  $D$  on  $OC$  such that  $OD$  is length  $mn$ .



Math 1020 Math in Art  
Midterm Exam, February 28, 2008

MT 1

Name: \_\_\_\_\_ Student Number: \_\_\_\_\_

1.	max=7	
2.	max=6	
3.	max=9	
4.	max=11	
5.	max=7	

*Important:* "Construct" means "construct using an unmarked ruler and a compass". The phrase "unmarked ruler" stands for any ruler that may be used only as a straight edge to draw straight line segments. When you use a compass, show the (intermediate) circular arcs you draw in your constructions (do **NOT** erase them). Use words to describe **BRIEFLY** what you have done.

[7 points] 1. (a) Construct (using an unmarked ruler and a compass) an angle of  $30^\circ$  with a corner at O and over the given semi-line.

(b) Bisect the angle constructed in part (a) of this exercise.

(Do not forget to briefly describe your steps.)



[6 points] 2. Construct one of the two golden cuts of the line segment given below.

