

# POST TEST KEY

Star Navigation: Explorations into Angles and Measurement

A 6<sup>th</sup> grade module  
in

**Math in a Cultural Context**  
**UNIVERSITY OF ALASKA FAIRBANKS**

<b>Student Name:</b>	<b>PRE TEST KEY</b>
<b>Grade:</b>	
<b>Teacher:</b>	
<b>School:</b>	
<b>Location of School:</b>	
<b>Date:</b>	

\* \*This project has been funded by the U.S. Department of Education, *Determining the Potential Efficacy of 6th grade Math in a Cultural Context Project*, Jerry Lipka, P.I.

**Note: Students need a protractor for this test**

**25 total points**

Total Score:

1. What is an angle? Draw a picture and explain.

**NOTE: this item is worth 2 pts.**

**Picture (1 pt.):**



**Explanation: An angle is two rays that have a common endpoint (1pt.)**

2. What is an obtuse angle? , circle the correct answer.

**b. An angle larger than a right angle but smaller than a straight line. (1pt.)**

3. Looking at the angles marked below, circle the correct answer.

**c. The measure of Angle B is greater than the measure of angle A. (1 pt.)**

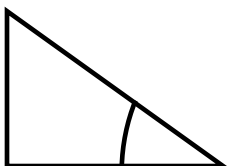


Angle A

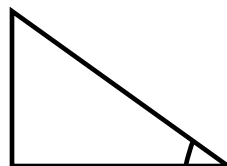


Angle B

4. The two triangles below are the same. Looking at the angles marked, circle the correct answer.



Angle A

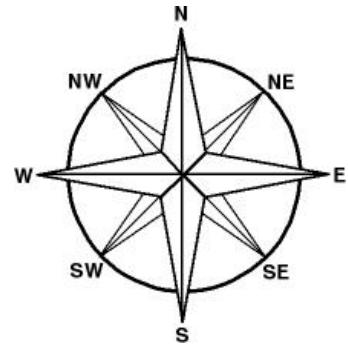


Angle B

**b. The measure of Angles A and B are the same. (1 pt.)**

Use the following information for questions 5, 6, and 7.

Here is a compass. You can read a compass using “compass degrees.” For example, North (N) is at 0 degrees and East (E) is at 90 degrees. Use the compass, answer the following questions.



5. What is the compass degree reading for South (S)? Circle the correct answer.

**a. c. 180 degrees (1 pt.)**

6. What direction has a compass degree reading of 45 degrees?

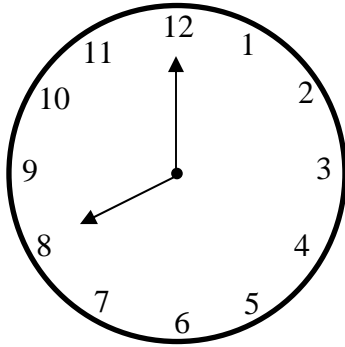
**NE (1 pt.)**

7. What is the compass degree reading for South East (SE)?

**135° (1 pt.)**

8. If this clock shows 8 o'clock, what is the angle between the hour and minute hands?  
 a. Draw in the hands                      b. Give the measure of the angle using degrees.

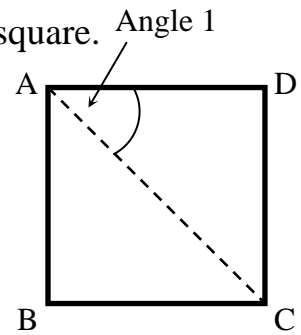
**(1 pt.) see picture below**



Angle Size

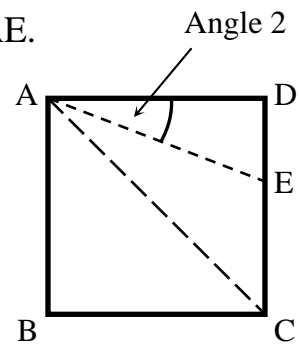
**120° (1 pt.)**

9. Here is a square. Angle A is the upper left corner of the square. Angle A is divided into two equal parts by the line AC.






What is the measure of Angle 1? **45° (1 pt.)**

10. Here is the same square from Question #9.  
 Angle 1 is now broken into two equal parts by the line AE.



What is the measure of Angle 2? **22.5° (1 pt.)**

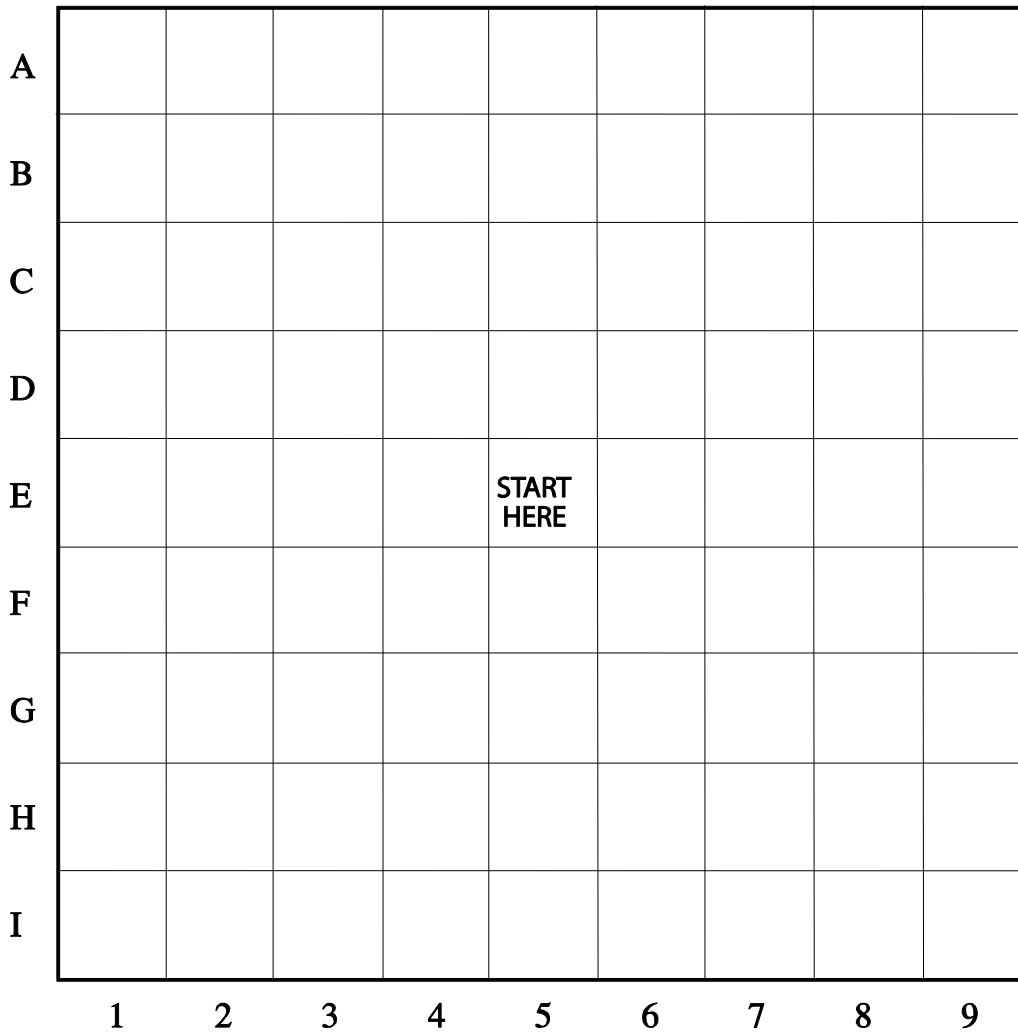
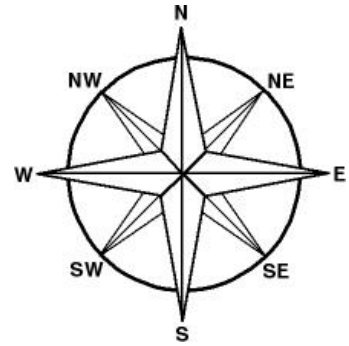
11. Complete the following table.

Picture	Is this an angle?	Why or why not?
a. 	<b><u>NO</u></b>	<b><u>Two rays do not have a common endpoint.</u></b>
b. 	<b><u>YES</u></b>	<b><u>Straight angle.</u></b>
c. 	<b><u>NO</u></b>	<b><u>Sides are not rays.</u></b>

**NOTE: Items 8a, 8b, and 8c are each worth 1 pt. (3 pts. Total); students must get both the YES/NO and explanation parts correct for each item to receive 1 pt. (otherwise 0 pts.)**

12. Follow the directions and find your way home.

- a. Begin at Start Here, location: 5E
- b. Move two spaces directly North. Mark an X on the location and write the coordinates here: \_\_\_  
**5C (1 pt.)**
- c. Move one space in a NE direction. Mark an X on the location and write the coordinates here: \_\_\_  
**6B (1 pt.)**
- d. Now move three spaces East. Mark an X on the location and write the coordinates here: \_ **9B (1 pt.)**



13. Here is shadow data collected in Alaska.

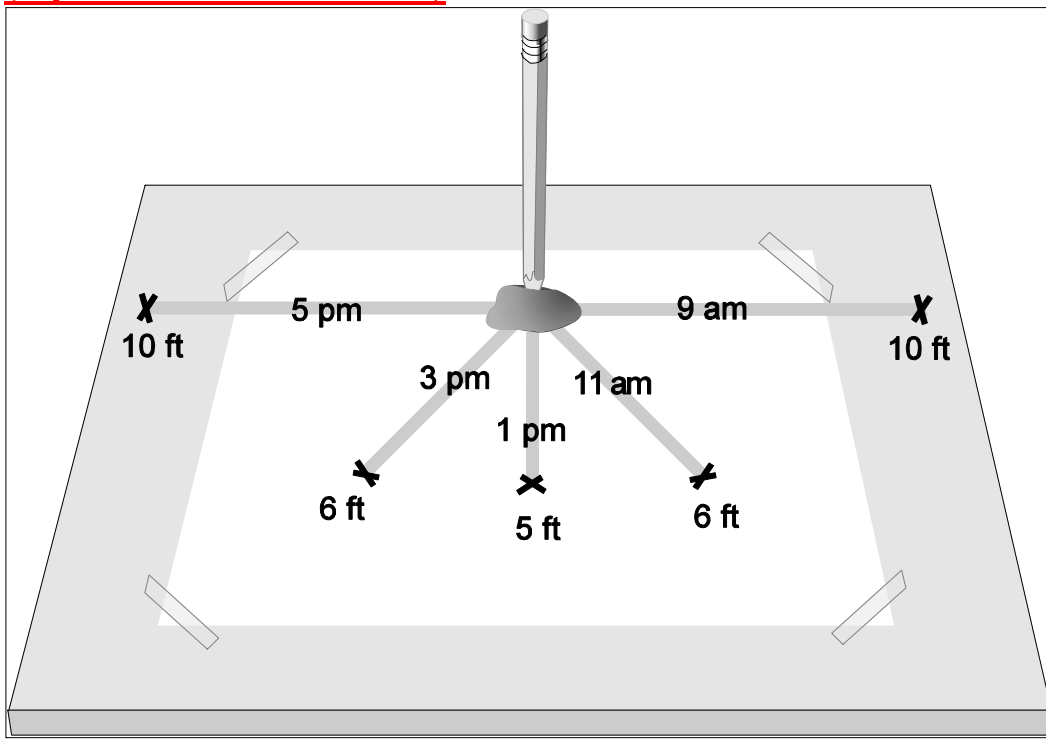
- What time shows the shortest shadow? **1 p.m. (1 pt.)**
- What direction in the sky would you find the sun? Circle the correct answer

**ii. South (1 pt.)**

Time	Shadow Data
9 am	10 feet
11 am	6 feet
1 pm	5 feet
3 pm	6 feet
5 pm	10 feet

- The sun shines on a sundial. Use the Time and Shadow Data table and represent (draw it) the data. Draw and label the data.

**(1 pt. for correct sketch)**



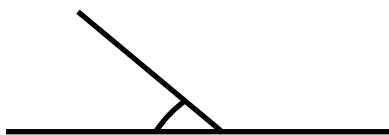
Turn in this part of the test to your teacher.

Complete this page with a protractor.

Teacher's Name: \_\_\_\_\_

Use a protractor to measure the marked angle in each object below. Place your answer in degrees on the line under the angle. **Answers: 14a is  $40^\circ$ , 14b is  $320^\circ$ , 14c is  $65^\circ$ ; each response is 1 pt., 3 pts. total.**

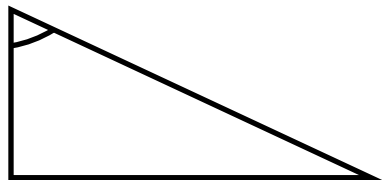
14.



a) \_\_\_\_\_



b) \_\_\_\_\_



c) \_\_\_\_\_

15. Use a protractor to divide this angle into 3 equal angles. What is the measure of each angle you drew in degrees? **Angles are each  $40^\circ$  (1 pt.)**

