

GMF 10

Lesson 7.1

Chapter

7

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Angles and Parallel Lines



Angles and parallel lines provide BC's Liard River Bridge with strength, stability, and visual appeal. The bridge was built in 1942.

Nov 19-11:34 AM

KEY TERMS

- angle
- angle measure
- degree
- parallel lines
- perpendicular lines
- transversal

Nov 19-2:37 PM

Angles, Angles, Angles Who uses angles??

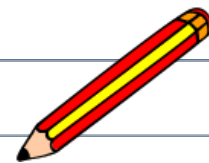
This building was voted the ugliest building in Toronto, what do you think??



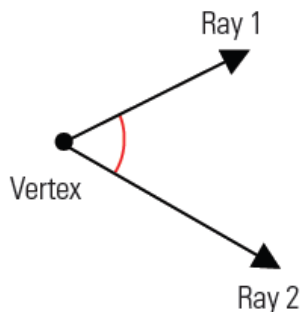
Nov 19-2:39 PM

7.1

Measuring, Drawing, and Estimating Angles



angle: two rays that meet at a point called a **vertex**.




Angles are usually measured in


degrees using a protractor.


Angle measures range from 0° to 360° .


Feb 13-4:41 PM




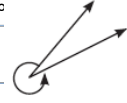
Types of angles:

- acute - their angle measure is between 0° and 90° 

- right - their angle measure is 90°
- the two rays are perpendicular to each other 

- obtuse - their angle measure is between 90° and 180° 

- straight - their angle measure is 180° 

- reflex - their angle measure is between 180° and 360° 

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1. Identify the type of angle: acute, right, obtuse, straight, or reflex.

a) 68°

b) 215°

c) 91°

d) 32°

e) 180°

f) 99°

g) 195°

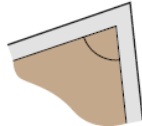
h) 265°

Referents - common angles used for estimations Pg 216

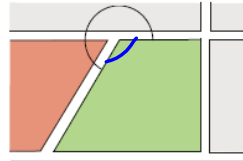


Estimations are made in many trades that use angles. Imagine that you are working as a tradesperson in the situations below and make the following estimations (aim to be within 5°).

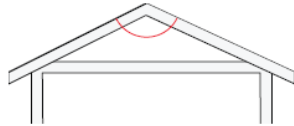
a) a landscaper estimating the angle of the corner of a garden bed



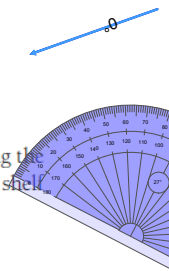
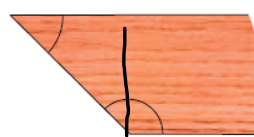
b) a surveyor estimating the angle of a property boundary line on a map



c) a roofer estimating the angle of the peak of a roof



d) a cabinet-maker estimating the angles of two corners of a shelf



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Angle referent: a common standard of angle measure,

ex:

$0^\circ, 45^\circ, 90^\circ, 180^\circ, 360^\circ$

HINT

A clock face is an example of a referents diagram.

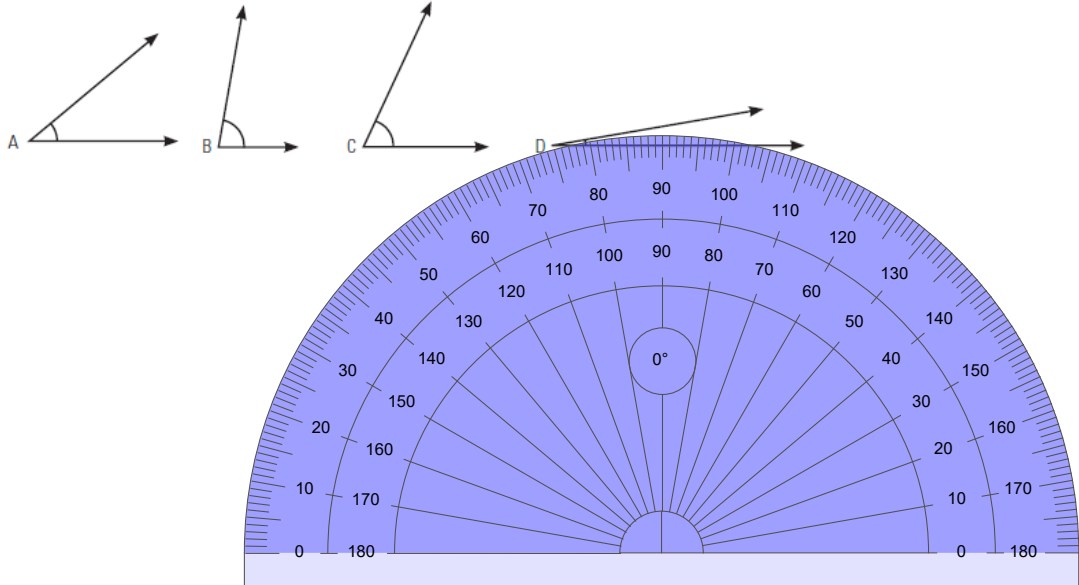


Have you ever heard someone say it is located at your 3 O'Clock???

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2. Use the referents to determine the approximate size of the following angles.



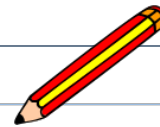
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Homework

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Complementary angles:

- two or more angles that add up to equal 90°

Supplementary angles:

- two or more angles that add up to 180°

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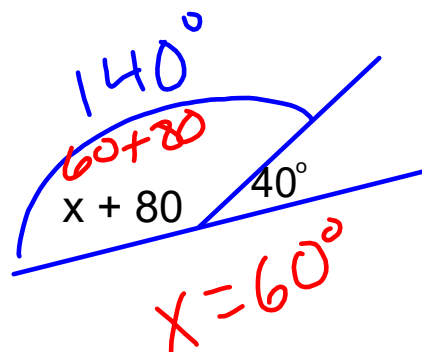
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6. Fill in the chart with the complement and the supplement of each angle, if they exist. If they don't exist, state why.

ANGLE COMPLEMENTS AND SUPPLEMENTS		
Angle	Complement (add 90)	Supplement
45°	45°	135°
78°	12°	102°
112°	— NA	68°
160°	—	20°
220°	—	—

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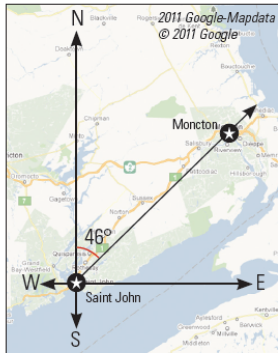
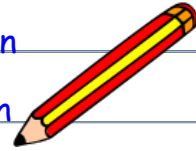
Can you find the value of x



$$\begin{array}{r}
 180 \\
 - 40 \\
 \hline
 140
 \end{array}$$

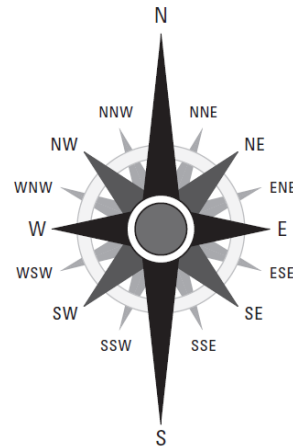
May 7-9:21 PM

True bearing: the angle measured clockwise between true north and an intended path or direction expressed in degrees.



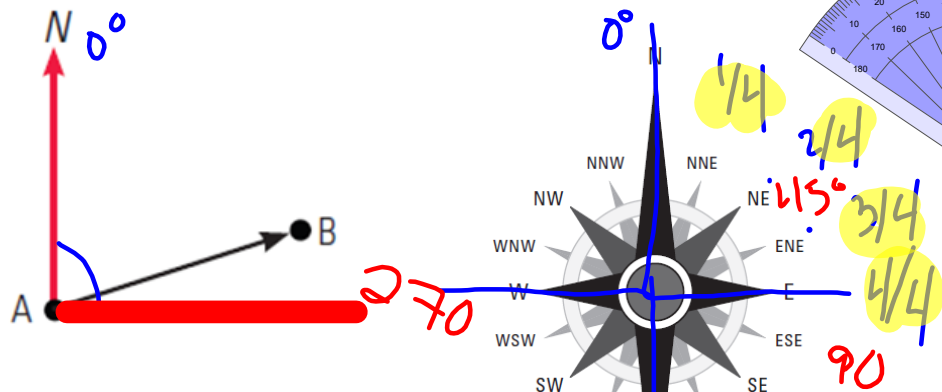
Cardinal direction: is using the compass rose.

HINT
Cardinal direction N is bearing 0°.



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What is the cardinal direction between A and B?

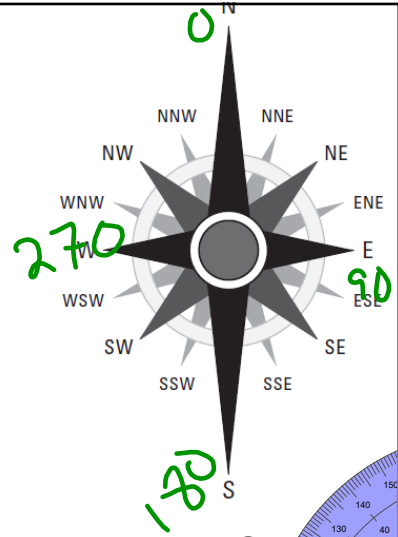
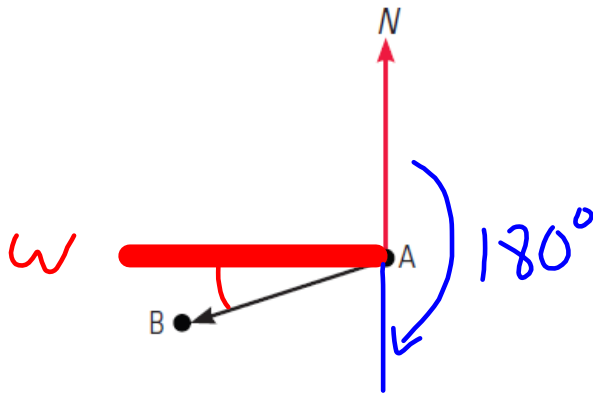


What is the approx. true bearing?

$$\frac{3}{4} \text{ of } 90^\circ = 67.5^\circ \quad | \quad 90^\circ - 22.5^\circ = 67.5^\circ$$

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b) What is the cardinal direction of A and B?

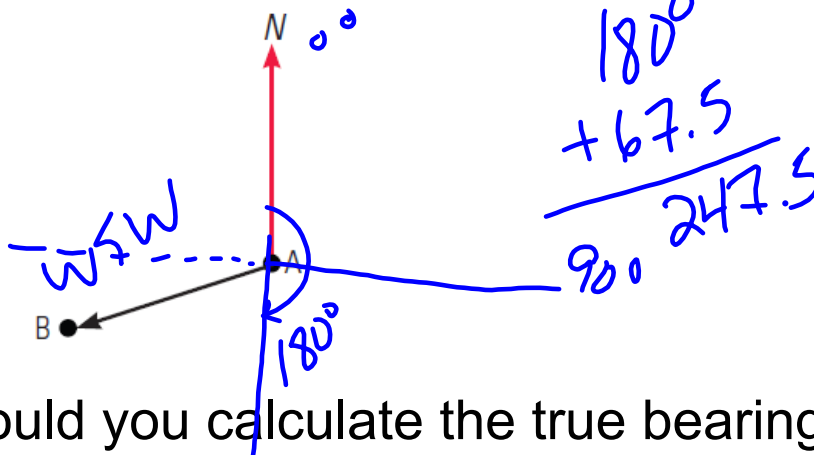
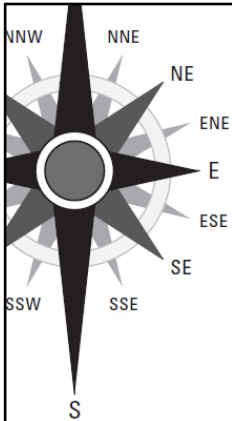


How could you calculate the true bearing?

$$270 - 22.5 = 247.5$$

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the cardinal direction of A and B?

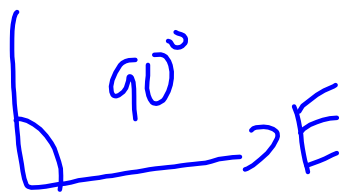
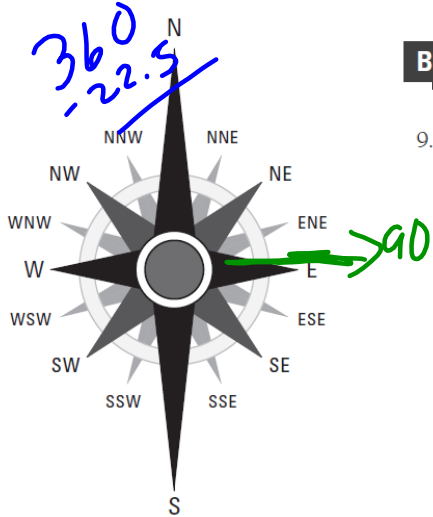


How could you calculate the true bearing?

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9. If a boat is travelling 25° south of straight east, what is its true bearing?



$$\begin{array}{r} 90^\circ \\ + 25 \\ \hline 115^\circ \end{array}$$

Apr 3-11:28 PM

Homework

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Pg. 220 Q. 7 & 8

Pg. 222 Q. 10 & 11

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