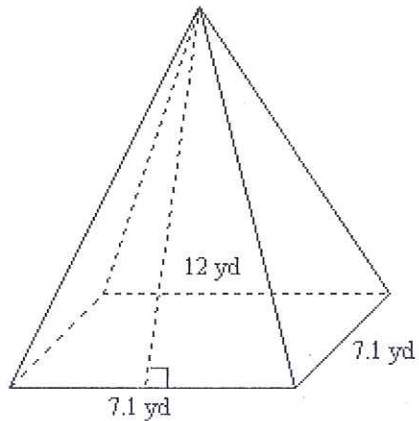


Chapter 3 online review

Indicate the answer choice that best completes the statement or answers the question.

Find the surface area of the solid.

1.



- A. 273.8 yd<sup>2</sup>    B. 201.6 yd<sup>2</sup>  
 C. 391.2 yd<sup>2</sup>    **D. 220.8 yd<sup>2</sup>**

Square Base Area

$$A = s^2$$

$$A = 7.1^2$$

$$A = 50.41 \text{ yd}^2$$

Triangle Sides Area

$$A = \frac{1}{2}bh$$

$$A = \frac{1}{2}(7.1)(12)$$

$$A = 42.6 \text{ yd}^2$$

4 triangles so multiply by 4

$$A_{4\text{triangles}} = (42.6 \text{ yd}^2)4$$

$$A = 170.4 \text{ yd}^2$$

Total Surface Area =  $50.41 \text{ yd}^2 + 170.4 \text{ yd}^2$

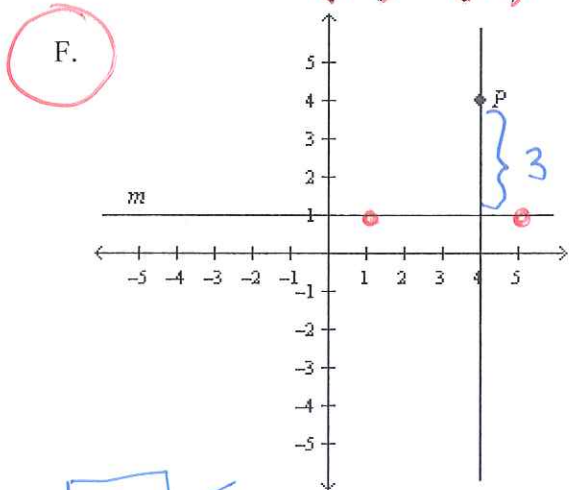
$$\boxed{\text{S.A.} = 220.8 \text{ yd}^2}$$

Chapter 3 online review

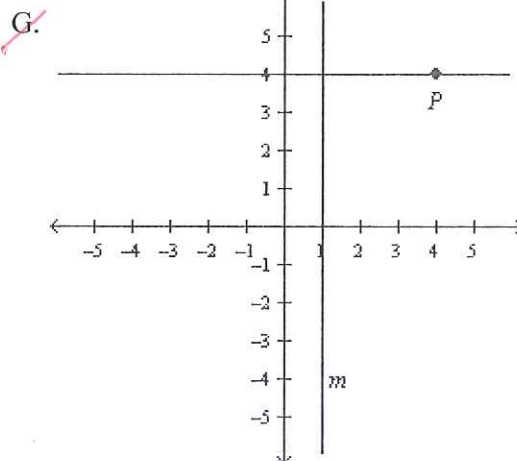
Construct a line perpendicular to  $m$  through  $P$ . Then find the distance from  $P$  to  $m$ .

Note the calculated distance for each answer choice in the lower left hand corner of the coordinate plane.

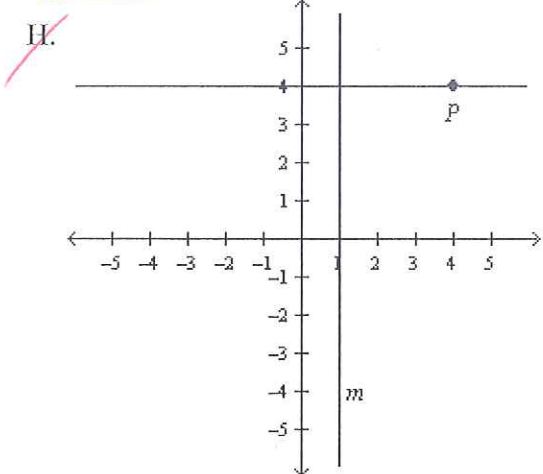
2. Line  $m$  contains points  $(5, 1)$  and  $(1, 1)$ . Point  $P$  has coordinates  $(4, 4)$ .



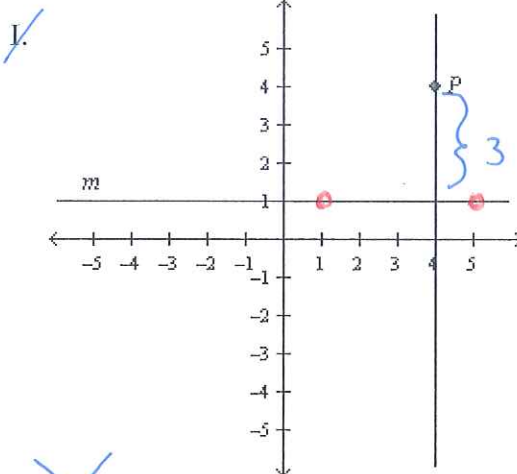
$d = 3$  ✓



$d = 4$



$d = 3$



~~$d = 4$~~

3. Two angles are supplementary. One angle measures  $32^\circ$  more than the other. Find the measure of the two angles.

- A. 74, 106
- B. 32, 148
- C. 100, 132
- D. 76, 104

Need 2 equations:

$$x + 32 = y$$

substitute for y

$$x + y = 180$$

$$x + (x + 32) = 180$$

$$2x + 32 = 180$$

$$\underline{-32} \quad \underline{-32}$$

$$2x = 148$$

$$\underline{2} \quad \underline{2}$$

$$x = 74$$

substitute for x

$$x + 32 = y$$

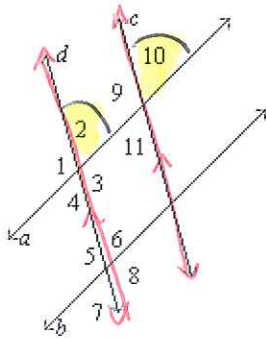
$$74 + 32 = y$$

$$106 = y$$

**Chapter 3 online review**

Given the following information, determine which lines, if any, are parallel. State the postulate or theorem that justifies your answer.

4.  $\angle 2 \cong \angle 10$



"a" is transversal  
 $\angle 2 + \angle 10$  on same side of transversal  
 1 interior + 1 exterior so  
 corresponding  $\angle$ s  
 parallel lines are: Lines c & d.

F.  $c \parallel d$ ; congruent alternate exterior angles

G.  $a \parallel b$ ; congruent corresponding angles

H.  $a \parallel b$ ; congruent alternate exterior angles

I.  $c \parallel d$ ; congruent corresponding angles

computer answer (incorrect)

would need opp. reciprocal slopes

5. Determine whether  $\overline{WX}$  and  $\overline{YZ}$  are parallel, perpendicular, or neither.

$W(-1, -3), X(2, 2)$

$Y(3, -1), Z(4, 3)$

A. perpendicular

B. neither

C. parallel

would need same slope

slope of  $\overline{WX}$

$$\frac{2 - (-3)}{2 - (-1)} = \frac{5}{3}$$

slope of  $\overline{YZ}$

$$\frac{3 - (-1)}{4 - 3} = \frac{4}{1}$$

Determine whether the conjecture is true or false. Give a counterexample for any false conjecture.

6. **Given:** Two angles are supplementary. — this means  $m\angle 1 + m\angle 2 = 180^\circ$

**Conjecture:** They are both acute angles.

Acute  $\angle$ s have a measure less than  $90^\circ$

F. True

G. False; either both are right or one is obtuse.

H. False; either both are right or they are adjacent.

I. False; they must be vertical angles.

If both acute angles were  $89^\circ$  each, the largest they could be, the sum of the angles would be  $89 + 89 = 178^\circ \neq 180^\circ!$

**Chapter 3 online review**

7. **Given:** a concave polygon

**Conjecture:** It can be regular or irregular.

A. True

B. False; all concave polygons are regular.

C. False; to be concave the angles cannot be congruent.

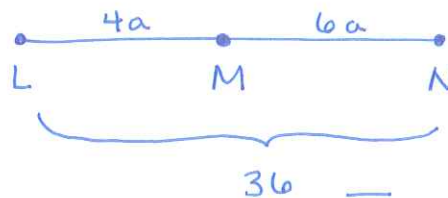
D. False; a concave polygon has an odd number of sides.

*no, b/c angles can't be congruent so neither can sides be ≅*  
*not always*

8. Find the value of the variable and **LM** if M is between L and N.

Hint: draw segment LN and put M between L and N to "see" the equation.

$LM = 4a, MN = 6a, LN = 36$



*correct answer*

F.  $a = 3.60, LN = 14.40$

G.  $a = 9, LN = 90$

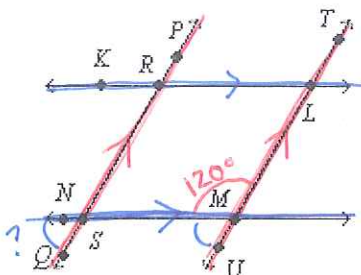
*on-line answer*

H.  $a = 6.00, LN = 60.00$

I.  $a = 9, LN = 54$

$$\begin{aligned} \overline{LM} + \overline{MN} &= \overline{LN} \\ LM + MN &= LN \\ 4a + 6a &= 36 \\ \frac{10a}{10} &= \frac{36}{10} \\ a &= 3.6 \end{aligned}$$

9. In the figure,  $m\angle NML = 120^\circ$ ,  $PQ \parallel TU$  and  $KL \parallel NM$ . Find the measure of angle QSN.



Linear Angles (Supplementary):  
 $m\angle LMN + m\angle NMU = 180^\circ$   
 $\overset{120^\circ}{-120^\circ} + m\angle NMU = 180^\circ$   
 $\underline{\hspace{1.5cm} -120^\circ}$   
 $m\angle NMU = 60^\circ$

$LM = 4(3.6)$   
 $LM = 14.40$

$m\angle NMU \cong m\angle QSN$  by corresponding angles

- A. 40
- B. 120
- C. 60
- D. 100

Determine the slope of the line that contains the given points.

- 10. T(6, 2), V(7, 7)
- F. 0
- G.  $\frac{1}{5}$
- H. 5
- I.  $-\frac{1}{5}$

slope =  $\frac{y_2 - y_1}{x_2 - x_1} = \frac{7 - 2}{7 - 6} = \frac{5}{1} = 5$

$\begin{matrix} y \\ (7, 7) \\ (6, 2) \end{matrix}$



Chapter 3 online review

Write an equation in slope-intercept form for the line passing through the pair of points.

11.  $(-4, -2), (-6, 5)$

A.  $y = \frac{7}{2}x + 16$

B.  $y = -\frac{7}{2}x - 16$

C.  $y = \frac{7}{2}x - 16$

D.  $y = \frac{2}{7}x + 16$

$y = mx + b$

slope ↓      ← y-int

$m = \frac{5 - (-2)}{-6 - (-4)} = \frac{5 + 2}{-6 + 4} = \frac{7}{-2}$

pick point: I chose  $(-4, -2)$  & use slope

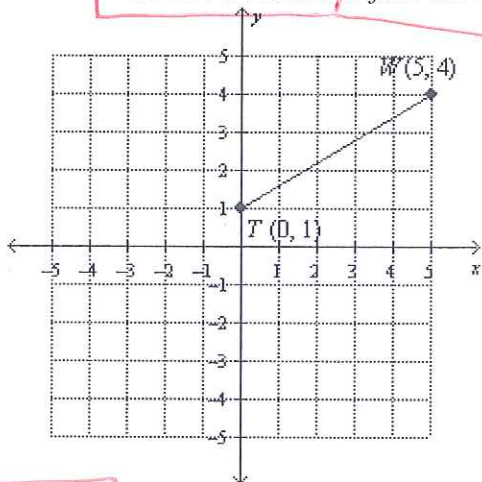
$y + 2 = -\frac{7}{2}(x + 4)$

$y + 2 = -\frac{7}{2}x - 14$

$y = -\frac{7}{2}x - 16$

Use the Distance Formula to find the distance between each pair of points.

12.



$d = \sqrt{(y_2 - y_1)^2 + (x_2 - x_1)^2}$

$d = \sqrt{(4 - 1)^2 + (5 - 0)^2}$

$d = \sqrt{3^2 + 5^2}$

$d = \sqrt{9 + 25}$

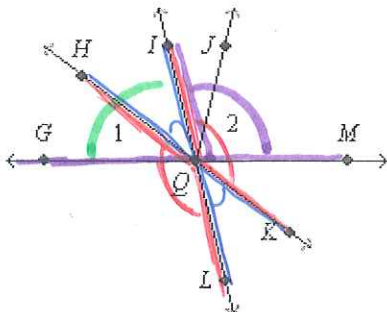
$d = \sqrt{34}$

Points: T (0, 1)  
W (5, 4)

- F.  $\sqrt{34}$       G.  $\sqrt{50}$   
H. 5            I. 6

**Chapter 3 online review**

Use the figure to find the angles.



13. Name two obtuse vertical angles.
- A.  $\angle HQL, \angle IQK$     B.  $\angle KQL, \angle IQH$   
 C.  $\angle KQL, \angle KQM$     D.  $\angle GQI, \angle IQM$

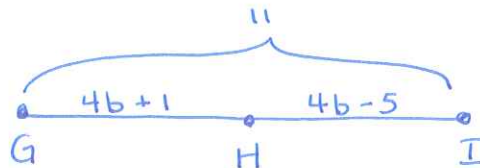
both are less than  $90^\circ$ , so not correct!

14. Name an angle supplementary to  $\angle MQI$ .
- F.  $\angle MQK$     G.  $\angle IQH$   
 H.  $\angle IQG$     I.  $\angle GQL$

sum of 2 angles is  $180^\circ$

15. Find the value of the **variable** and **GH** if H is between G and I.

$GH = 4b + 1$ ,       $HI = 4b - 5$ ,       $GI = 11$



- A.  $b = 2.50, GH = 16.00$     B.  $b = 1.88, GH = 8.50$   
 C.  $b = 4, GH = 6$       D.  $b = 4, GH = 17$

$$GH + HI = GI$$

$$(4b + 1) + (4b - 5) = 11$$

$$8b - 4 = 11$$

$$8b = 15$$

$$b = \frac{15}{8}$$

computer answer (incorrect!)

Write an equation in slope-intercept form of the line having the given slope and y-intercept.

16.  $m = -\frac{3}{4}, (0, -6)$
- F.  $y = \frac{18}{4}x$     G.  $y = -\frac{3}{4}x - 6$   
 H.  $y = -6x - \frac{3}{4}$     I.  $y = -\frac{6}{4}x$

$y = mx + b$

$$y - (-6) = -\frac{3}{4}(x - 0)$$

$$y + 6 = -\frac{3}{4}x - 6$$

$$y = -\frac{3}{4}x - 6$$

$$b = \frac{15}{8} \approx 1.88$$

$$GH = 4b + 1$$

$$GH = 4(1.88) + 1$$

$$GH = 8.50$$

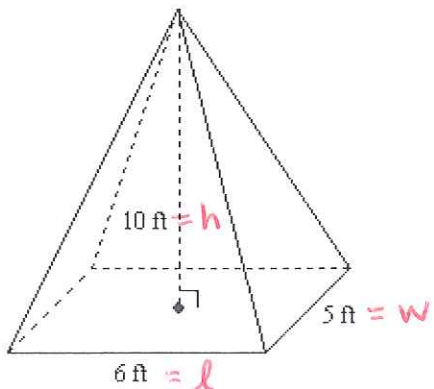
**Chapter 3 online review**

Find the volume of the solid.

$$V = \frac{1}{3} l \cdot w \cdot h$$

$$V = \frac{1}{3} (6\text{ft}) (5\text{ft}) (10\text{ft})$$

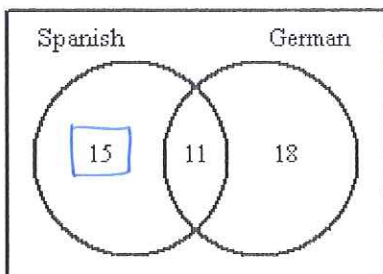
$$V = 100\text{ft}^3$$



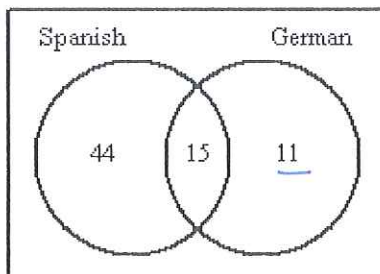
- A.  $300\text{ft}^3$
- B.  $80\text{ft}^3$
- C.  $110\text{ft}^3$
- D.  $100\text{ft}^3$

18. Of the 44 students studying foreign languages at Ashley's school, 15 are studying Spanish only, 11 are studying German only, and 18 are studying both languages. Which Venn diagram correctly shows this situation?

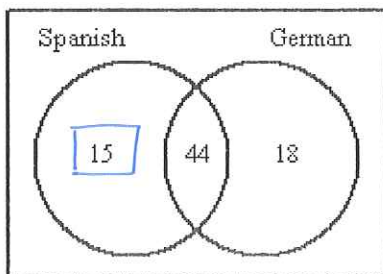
F. Learning Foreign Languages



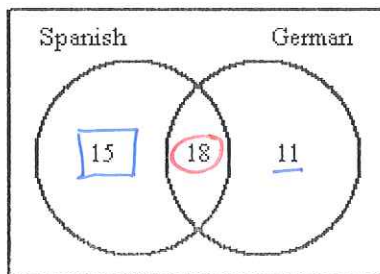
G. Learning Foreign Languages



H. Learning Foreign Languages

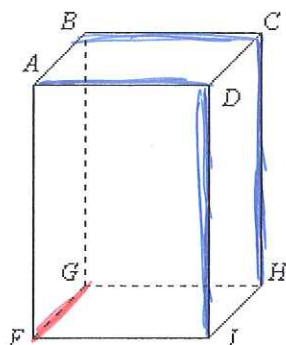


I. Learning Foreign Languages



**Chapter 3 online review**

1. Refer to the figure below.

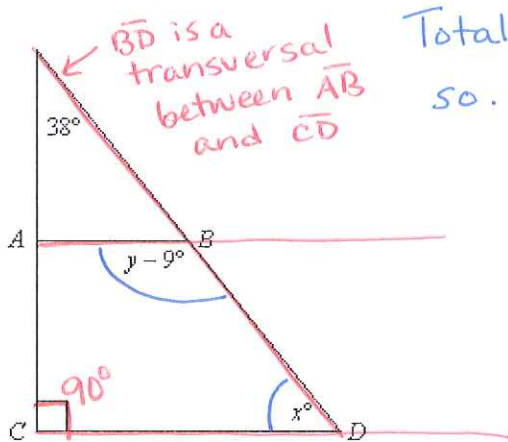


*neither parallel nor intersecting*

19. Name all segments skew to  $\overline{GF}$ .

- A.  $\overline{BC}, \overline{AD}, \overline{DI}, \overline{CH}$
- B.  $\overline{FI}, \overline{GH}, \overline{DI}, \overline{CH}$
- C.  $\overline{AD}, \overline{AB}, \overline{BC}, \overline{CD}$
- D.  $\overline{CD}, \overline{CH}, \overline{DI}, \overline{HI}$

20. In the figure,  $\overline{AB} \parallel \overline{CD}$ . Find  $x$  and  $y$ .



Total degree measure of a  $\Delta = 180^\circ$   
 so...  $38^\circ + 90^\circ + x^\circ = 180^\circ$   
 $(128)^\circ + x^\circ = 180^\circ$   
 $- (128)^\circ \quad - 128^\circ$

*substitute for x*  $x^\circ = 52^\circ$

By Same Side Supplementary:

$$m\angle BDC + m\angle ABD = 180^\circ$$

$$x^\circ + (y - 9)^\circ = 180^\circ$$

$$52^\circ + y - 9^\circ = 180^\circ$$

$$y + (43)^\circ = 180^\circ$$

$$\quad - (43)^\circ \quad - 43^\circ$$
 $y = 137^\circ$

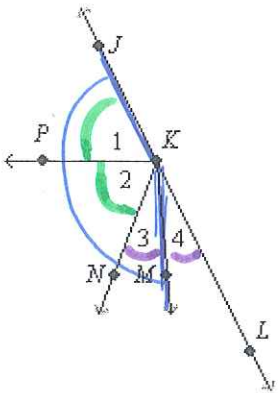
- F.  $x = 32, y = 137$
- G.  $x = 38, y = 151$
- H.  $x = 52, y = 137$
- I.  $x = 137, y = 52$



Chapter 3 online review

→ meaning  $\angle 3 \cong \angle 4$

In the figure,  $\overrightarrow{KJ}$  and  $\overrightarrow{KL}$  are opposite rays.  $\angle 1 \cong \angle 2$  and  $\overrightarrow{KM}$  bisects  $\angle NKL$ .



By Linear Angles:

$$m\angle JKM + m\angle 4 = 180^\circ$$

$$(5x + 18) + x = 180^\circ$$

$$6x + 18 = 180^\circ$$

$$\frac{6x}{6} = \frac{162^\circ}{6}$$

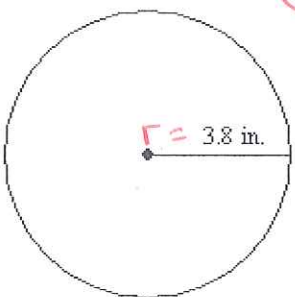
$$x = 27^\circ = m\angle 4$$

21. If  $m\angle JKM = 5x + 18$  and  $m\angle 4 = x$ , what is  $m\angle 4$ ?

- A. 153    B. 33
- C. 27    D. 12

Find the circumference of the figure.

22.



$C = 2\pi r$  ← radius

$$C = 2\pi (3.8)$$

$$C = 23.88 \text{ in}$$

- F. about 23.9 in.    G. about 11.9 in.
- H. about 7.6 in.    I. about 45.3 in.

Write an equation in point-slope form of the line having the given slope that contains the given point.

23.  $m = 4.2, (2.2, 4.2)$

$y - y_1 = m(x - x_1)$

- A.  $y = 4.2x - 13.44$
- B.  $y - 2.2 = 4.2(x - 4.2)$

- C.  $y - 4.2 = 4.2(x - 2.2)$
- D.  $y + 4.2 = 4.2(x + 2.2)$

$$y - 4.2 = 4.2(x - 2.2)$$

Chapter 3 online review

Find the perimeter in question 11..

24. Find the perimeter of A regular octagon that has a side measuring 7 mm.

F. 28 mm    G. 60 mm

H. 56 mm    I. 42 mm

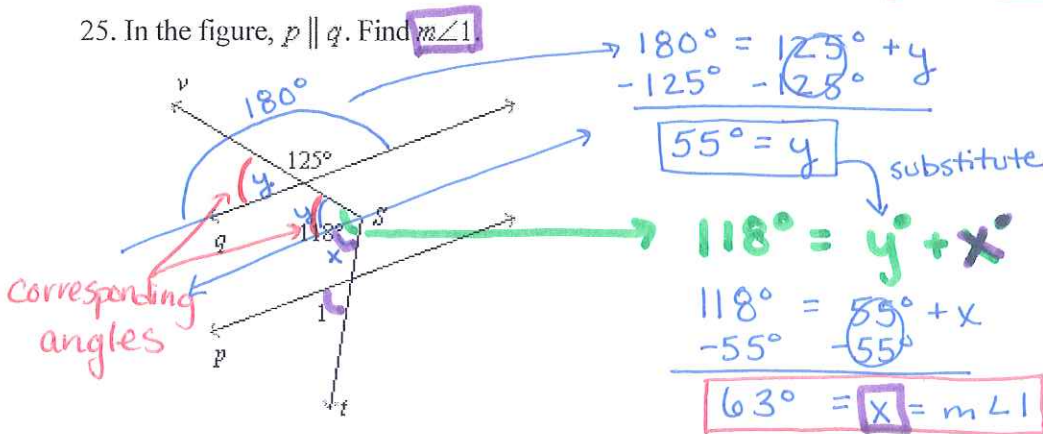
8 equal sides

$P = 8s$  ← sides

$P = 8(7\text{mm})$

$P = 56\text{mm}$

25. In the figure,  $p \parallel q$ . Find  $m\angle 1$



A.  $m\angle 1 = 35$

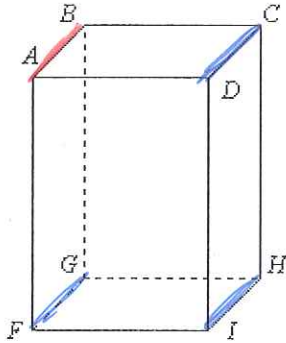
B.  $m\angle 1 = 63$

C.  $m\angle 1 = 62$

D.  $m\angle 1 = 55$

**Chapter 3 online review**

Refer to the figure below.



26. Name all segments parallel to  $\overline{AB}$ .
- F.  $\overline{AD}, \overline{BC}, \overline{GH}, \overline{FI}$     G.  $\overline{DI}, \overline{CH}, \overline{GH}, \overline{FI}$
- H.  $\overline{CD}, \overline{FG}, \overline{HI}$     I.  $\overline{GH}, \overline{AD}, \overline{FI}$

Find the coordinates of the **midpoint** of a segment having the given endpoints.

27.  $Q(8.8, 3.6), R(4.9, 9.2)$
- A. (6.85, 6.4)    B. (6.2, 7.05)
- C. (1.95, -2.8)    D. (3.9, -5.6)

$$\left( \frac{x_2 + x_1}{2}, \frac{y_2 + y_1}{2} \right)$$

$$\text{mdpt } \overline{QR} = \left( \frac{4.9 + 8.8}{2}, \frac{9.2 + 3.6}{2} \right) = (6.85, 6.4)$$