

Key

Geometry Chapter 1 Pre-Test

Find a pattern for the following sequences.

1.) 6, 10, 14, 18, 22...

$+4$ $+4$ $+4$ $+4$

$+4$

2.) 5, 8, 12, 17, 23...

$+3$ $+4$ $+5$ $+6$

Each increment increases by 1

3.) 60, 40, 30, 25, 22.5...

$\div 2$ $\div 2$ $\div 2$ $\div 2$

Each increment is halved

$20, 20 \div 2 = 10, 10 \div 2 = 5, 5 \div 2 = 2.5$

4.) -2, 6, -18, 54, -162...

$\times -3$ $\times -3$ $\times -3$ $\times -3$

$\times -3$

Use the illustration to answer the following.

- 1.) What is the intersection of planes P and Q?

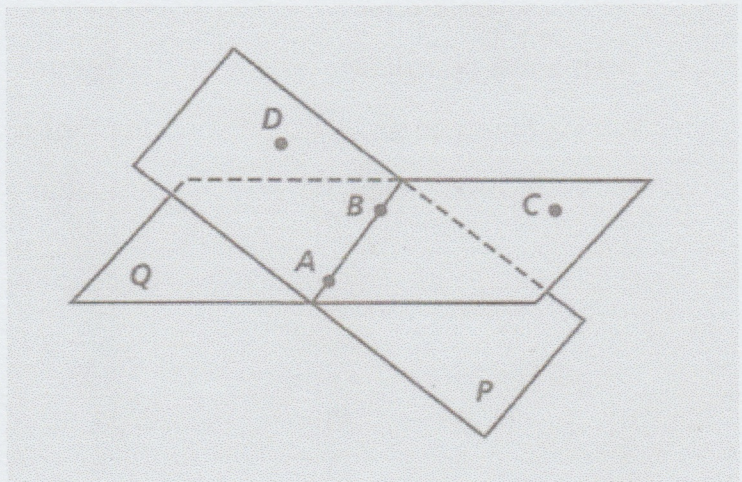
intersection of 2 planes is a line. Here it is

\overline{AB}

- 2.) List two pairs of collinear points.

AB, AC, BC

DB, DA



- 3.) What is the minimum requirement for a plane? Include one from the illustration.

3 noncollinear points

or

1 noncollinear point and a line

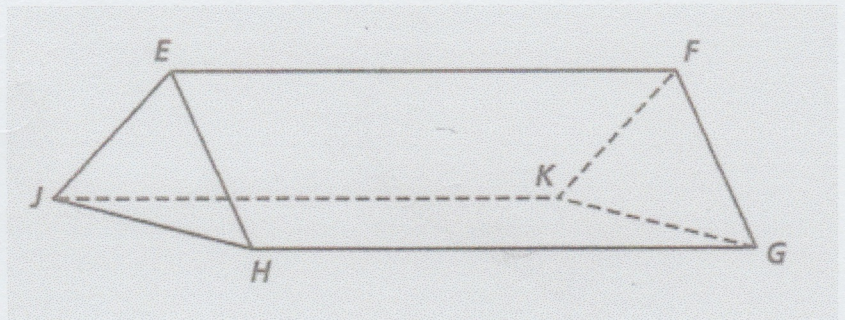
Use the illustration to answer the following.

- 1.) Name all of the segments parallel to EH.

\overline{FG}

- 2.) Name all segments skew to HG.

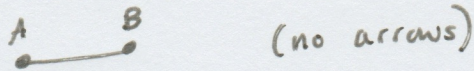
\overline{JE} \overline{KF}



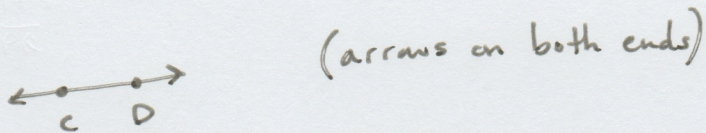
skew lines not on same plane, will never touch

Include proper arrow format for each of the following.

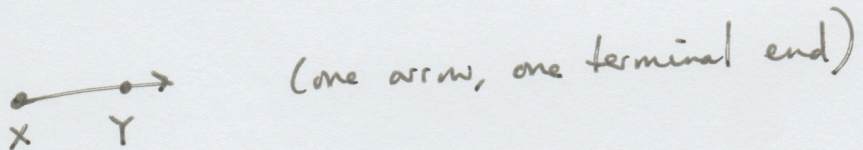
- 1.) Draw a line segment featuring points A and B.



- 2.) Draw line CD.



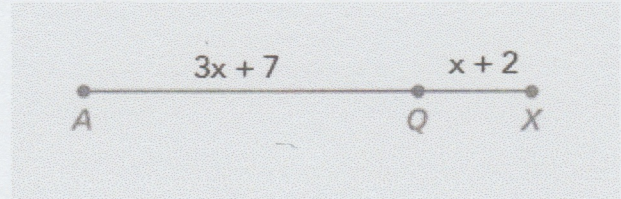
- 3.) Draw the ray XY.



If $AX = 57$, find the value of each of the following.

1.) AQ

$$\begin{aligned} \overline{AQ} &= 3x + 7 \\ 3(12) + 7 \\ 36 + 7 &= \boxed{43} \end{aligned}$$



2.) x

$$\boxed{12}$$

$$3x + 7 + x + 2 = 57$$

$$\begin{array}{r} 4x + 9 = 57 \\ -9 \quad -9 \end{array}$$

$$\frac{4x}{4} = \frac{48}{4}$$

$$x = 12$$

Find the measure of each of the following angles.

1.) $\angle DBE$

$$\boxed{27^\circ}$$

2.) $\angle DBF = \boxed{80^\circ}$

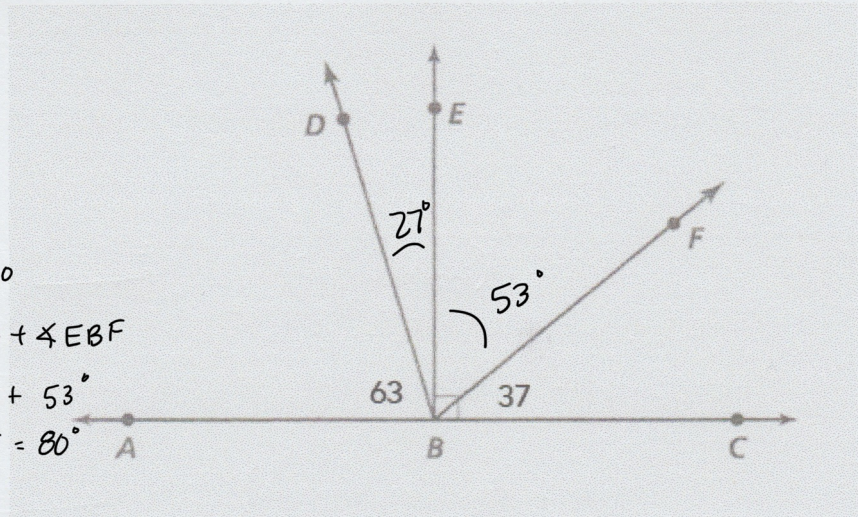
$$\begin{aligned} \angle EBF &= \boxed{53^\circ} \\ \angle DBE &= 27^\circ \\ \angle DBF &= \angle DBE + \angle EBF \\ &= 27^\circ + 53^\circ \\ \angle DBF &= 80^\circ \end{aligned}$$

3.) $\angle DBC$

$$\angle DBC = \angle DBE + 90^\circ$$

$$27^\circ + 90^\circ$$

$$= \boxed{117^\circ}$$



$$\angle ABE = 90^\circ$$

$$\angle CBE = 90^\circ$$

$$\angle ADB + \angle DBE = 90^\circ$$

$$\angle EBF + \angle FBC = 90^\circ$$

$$\begin{array}{r} 63^\circ + \angle DBE = 90^\circ \\ -63^\circ \end{array}$$

$$\begin{array}{r} \angle EBF + 37^\circ = 90^\circ \\ -37^\circ \end{array}$$

$$\angle DBE = 27^\circ$$

$$\angle EBF = 53^\circ$$

Find the distance between the points.

1.) $(2, 4)$ and $(-6, 7)$

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

$$\sqrt{(2 - (-6))^2 + (4 - 7)^2}$$

$$\sqrt{(2 + 6)^2 + (-3)^2}$$

$$\sqrt{(8)^2 + (-3)^2}$$

$$\sqrt{64 + 9}$$

$$= \boxed{\sqrt{73}}$$

2.) $(-1, -5)$ and $(4, 7)$

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

$$\sqrt{(4 - (-1))^2 + (7 - (-5))^2}$$

$$\sqrt{(4 + 1)^2 + (7 + 5)^2}$$

$$\sqrt{(5)^2 + (12)^2}$$

$$\sqrt{25 + 144}$$

$$\sqrt{169} = \boxed{13}$$

3.) $\begin{matrix} x_1, y_1 \\ (-7, 0) \end{matrix}$ and $\begin{matrix} x_2, y_2 \\ (-3, 2) \end{matrix}$

$$\begin{aligned} & \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2} \\ & \sqrt{(-3 - (-7))^2 + (2 - 0)^2} \\ & \sqrt{(-3 + 7)^2 + (2)^2} = \boxed{\sqrt{20} = 2\sqrt{5}} \\ & \sqrt{(4)^2 + (2)^2} \\ & \sqrt{16 + 4} \end{aligned}$$

Find the midpoint of each segment.

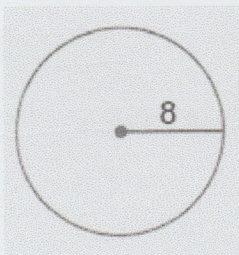
1.) A $\begin{matrix} x_2, y_2 \\ (6, 7) \end{matrix}$, B $\begin{matrix} x_1, y_1 \\ (-4, 1) \end{matrix}$

$$\begin{aligned} & \left(\frac{x_2 + x_1}{2}, \frac{y_2 + y_1}{2} \right) \\ & \left(\frac{6 + (-4)}{2}, \frac{7 + 1}{2} \right) = \left(\frac{2}{2}, \frac{8}{2} \right) = \boxed{(1, 4)} \end{aligned}$$

2.) C $\begin{matrix} x_2, y_2 \\ (5, -3) \end{matrix}$, D $\begin{matrix} x_1, y_1 \\ (-9, 2) \end{matrix}$

$$\begin{aligned} & \left(\frac{x_2 + x_1}{2}, \frac{y_2 + y_1}{2} \right) \\ & \left(\frac{5 + (-9)}{2}, \frac{-3 + 2}{2} \right) = \left(\frac{-4}{2}, \frac{-1}{2} \right) = \boxed{\left(-2, -\frac{1}{2} \right)} \end{aligned}$$

Find the circumference of the circle in terms of π .



$$\begin{aligned} C &= 2\pi r \\ &= 2\pi(8) \\ &= \boxed{16\pi \text{ units}} \end{aligned}$$

Find the perimeter and area of a rectangle when:

area = base \times height

$(8 \text{ cm})(6 \text{ cm})$

$\boxed{48 \text{ cm}^2}$

$b = 8 \text{ cm}, h = 6 \text{ cm}$

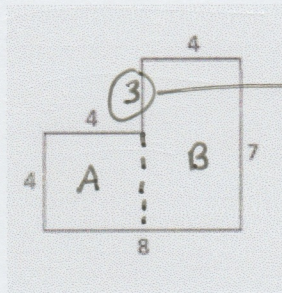
perimeter = $2b + 2h$
 $2(8 \text{ cm}) + 2(6 \text{ cm})$
 $16 \text{ cm} + 12 \text{ cm}$

$\boxed{28 \text{ cm}}$

Find the perimeter and area for the following figure.

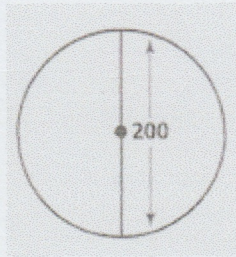
$$\begin{aligned}
 \text{Perimeter: } & 4 + 4 + 3 + 4 + 7 + 8 \\
 & \quad \swarrow \quad \searrow \\
 & 8 + 3 + 4 + 7 + 8 \\
 & \quad \swarrow \quad \searrow \\
 & 11 + 4 + 7 + 8 \\
 & \quad \swarrow \quad \searrow \\
 & 15 + 7 + 8 \\
 & \quad \swarrow \quad \searrow \\
 & 22 + 8 \\
 & \quad \swarrow \quad \searrow \\
 & 30
 \end{aligned}$$

30 units



$$\begin{aligned}
 \text{Area} &= \text{Area A} + \text{Area B} \\
 &= (4)(4) + (7)(4) \\
 &= 16 + 28 \\
 &= \boxed{44 \text{ units}^2}
 \end{aligned}$$

Find the area of the circle in terms of π .



$$D = 200$$

$$R = \frac{D}{2}$$

$$R = \frac{200}{2} = 100$$

$$\text{Area} = \pi r^2$$

$$\pi (100)^2$$

$$\pi (100)(100)$$

$$\boxed{10000\pi \text{ units}^2}$$