

# TBT QUIZ #1 Study Guide

10.) Which of the following expressions represents the sequence  $(1, 3, 5, 7, \dots)$  written explicitly for  $n = 1, 2, 3, \dots$ ?

A.  ~~$n + 1$~~

B.  ~~$n + 2$~~

C.  $2n - 1$

D.  $2n + 1$

11.) What is the solution to the inequality  $3x + 24 > 15x$ ?

A.  $x > 2$

B.  $x < 2$

C.  $x > 43$

D.  $x < 43$

$n$	1	2	3	4	$2 > x$
$f(n)$	1	3	5	7	$x < 2$
		$+2$	$+2$	$+2$	

$$\begin{aligned} & -3x \quad -3x \\ \hline & \frac{24}{12} > \frac{12x}{12} \end{aligned}$$

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

$$d = \sqrt{(16 - (-4))^2 + (-13 - (-7))^2}$$

$$d = \sqrt{(20)^2 + (-6)^2}$$

$$d = \sqrt{400 + 36}$$

$$d = \sqrt{436}$$

$$\begin{array}{r} 436 \\ 1 \overline{) 436} \\ \underline{4} \phantom{00} \\ 36 \\ \underline{36} \\ 0 \end{array}$$

$$\sqrt{4 \cdot 109}$$

$$\sqrt{4} \cdot \sqrt{109}$$

$$d = 2\sqrt{109}$$

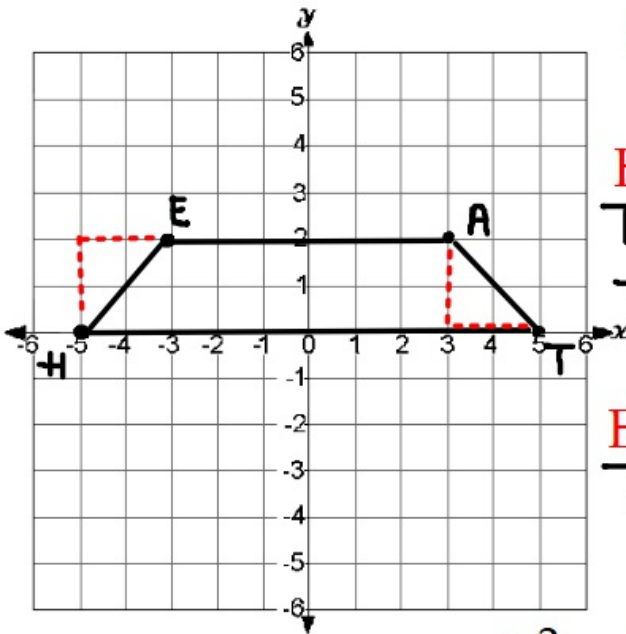
$$d = 20.88$$

#6

$$\begin{array}{r} 6x - 5y = 3 \\ -6x \phantom{-5y} = -6x \\ \hline -5y = -6x + 3 \\ \frac{-5y}{-5} = \frac{-6x + 3}{-5} \\ y = \frac{6}{5}x - \frac{3}{5} \end{array}$$

$$\begin{array}{r} 6y - 5x = 24 \\ 0 + 5x + 5y = 24 \\ \hline 6y = 5x + 24 \\ \frac{6y}{6} = \frac{5x + 24}{6} \\ y = \frac{5}{6}x + 4 \end{array}$$

H (-5,0), E(-3,2), A(3,2), T (5,0)



Find the slopes:

$$\begin{aligned} HE &= \\ m &= \frac{2-0}{-3-(-5)} \\ m &= 1 \end{aligned}$$

$$\begin{aligned} AT &= \\ m &= \frac{2-0}{3-5} \\ m &= -1 \end{aligned}$$

$$\begin{aligned} EA &= \\ m &= 0 \end{aligned}$$

$$\begin{aligned} HT &= \\ m &= 0 \end{aligned}$$

$$A^2 + B^2 = C^2$$

Find the distances:

$$\begin{aligned} HE \quad (2)^2 + (2)^2 &= C^2 \\ 4 + 4 &= C^2 \\ \sqrt{8} &= C \\ C &= \sqrt{8} \end{aligned}$$

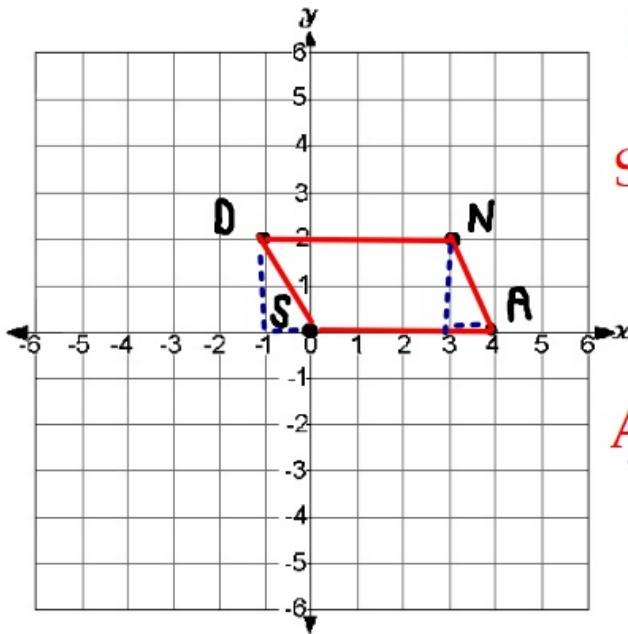
$$\begin{aligned} AT \quad (-2)^2 + (2)^2 &= C^2 \\ 4 + 4 &= C^2 \\ \sqrt{8} &= C \\ C &= \sqrt{8} \end{aligned}$$

$$\begin{aligned} EA \quad C &= 2\sqrt{2} \approx 2.82 \\ d &= 6 \end{aligned}$$

$$\begin{aligned} HT \quad C &= 2\sqrt{2} \approx 2.82 \\ d &= 10 \end{aligned}$$

Quadrilateral HEAT is an isosceles trapezoid because sides HE and AT are congruent and sides EA and HT are parallel.

S (0,0), A(4, 0), N(3, 2), D(-1, 2)



Find the slopes:

$$SA = m = 0$$

$$ND = m = 0$$

$$AN = m = -2$$

$$SD = m = -2$$

Find the distances:

$$SA \quad d = 4$$

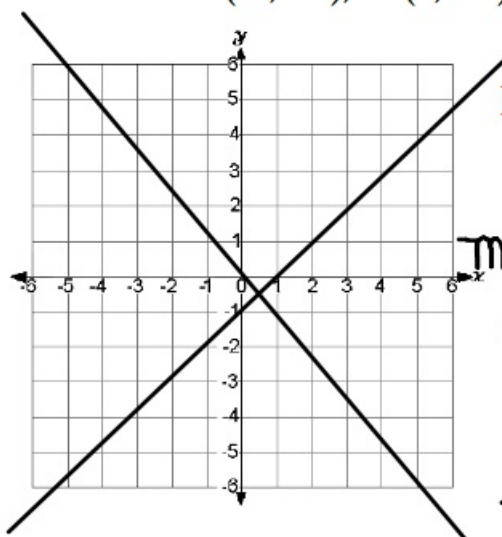
$$ND \quad d = 4$$

$$\begin{aligned} AN \quad (-2)^2 + (1)^2 &= c^2 \\ 4 + 1 &= c^2 \\ \sqrt{5} &= \sqrt{c^2} \\ c &= \sqrt{5} \end{aligned}$$

$$\begin{aligned} SD \quad (-2)^2 + (1)^2 &= c^2 \\ 4 + 1 &= c^2 \\ \sqrt{5} &= \sqrt{c^2} \\ c &= \sqrt{5} \end{aligned}$$

Quadrilateral SAND is a parallelogram because it has 2 pair of opposite parallel and congruent sides.

S (-9, 14), T (1, 10), U(-3,0), V(-13, 4)



Find the slopes:

$$\begin{aligned} \text{ST} &= \frac{10-14}{1-(-9)} = \frac{-4}{10} \\ m &= \frac{-2}{5} \\ \text{UV} &= \frac{4-0}{-13-(-3)} \\ m &= \frac{4}{-10} \\ m &= -\frac{2}{5} \\ \text{TU} &= \frac{0-10}{-3-1} = \frac{-10}{-4} \\ m &= \frac{5}{2} \\ \text{SV} &= \frac{4-14}{-13-(-9)} \\ m &= \frac{-10}{-4} \\ m &= \frac{5}{2} \end{aligned}$$

Find the distances:

$$\begin{aligned} \text{ST} \quad d &= \sqrt{(1-(-9))^2 + (10-14)^2} \\ d &= \sqrt{(10)^2 + (-4)^2} \\ d &= \sqrt{100+16} \\ d &= \sqrt{116} \\ \text{TU} \quad d &= \sqrt{(-3-1)^2 + (0-10)^2} \\ d &= \sqrt{(-4)^2 + (-10)^2} \\ d &= \sqrt{16+100} \\ d &= \sqrt{116} \\ \text{UV} \quad d &= \sqrt{(-13-(-3))^2 + (4-0)^2} \\ d &= \sqrt{(-10)^2 + (4)^2} \\ d &= \sqrt{100+16} \\ d &= \sqrt{116} \\ \text{SV} \quad d &= \sqrt{116} \end{aligned}$$

Quadrilateral STUV is a square because all four sides are congruent and consecutive sides are perpendicular.

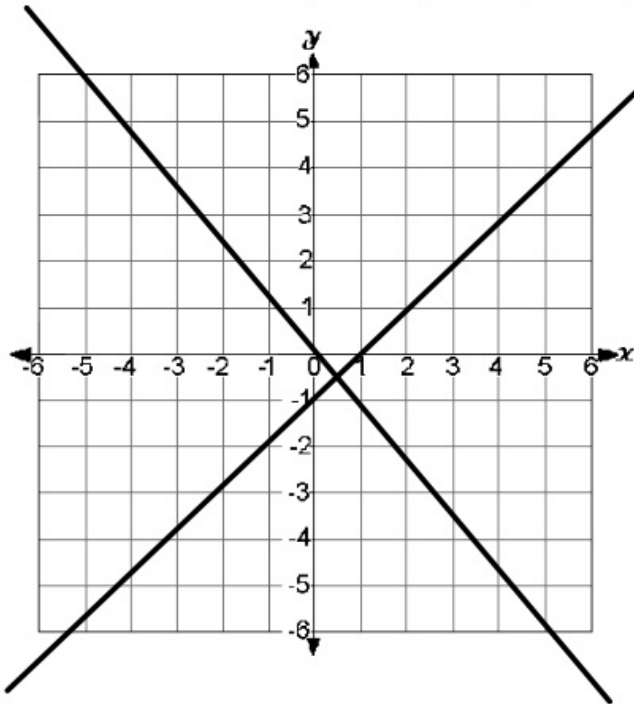
Area

$$\begin{aligned} A &= s^2 \\ A &= (\sqrt{116})^2 \\ A &= 116 \text{ units}^2 \end{aligned}$$

Perimeter

$$\begin{aligned} P &= 4s \\ P &= 4(10.77) \\ P &= 43.08 \text{ units} \end{aligned}$$

E (-7, -4), F (2, -3), G(0, -7), H(-9, -8)



Find the slopes:

EF =

GH =

FG =

EH =

Find the distances:

EF

GH

FG

EH

Quadrilateral EFGH is a(n) \_\_\_\_\_

because \_\_\_\_\_

\_\_\_\_\_.