**Final Exam**

**Constructions**

1. Construct an equilateral triangle with side using a compass and straight edge. (3 points)

*A B C*

2. Construct an angle bisector of the given angle. (3 points)

**3.** The measure of angle *T* is 70°.

a. What is the measure of an angle that is complementary to angle *T*? (1 point)

b. What is the measure of an angle that is supplementary to angle *T*? (1 point)

**4.** True or false: If *M* is the midpoint of , then *.* (1 point)

**5.** In the figure, line *x* is parallel to line *y* and . Determine the measure of angle 8. (1 point)



**6**. **.** In the figure, given that , *AB* = 13*x* + 9, *BC* = 35. Solve for *x, AB,* and *BC.* Show each step.



State an equation (1 pt):

*x =* (1 pt)

*AB =* (1 pt)

*BC =* (1 pt)

Check (1 pt):

**7.** Write the letter of the description in front of each term. (1 point each)



1. \_\_\_\_\_\_
2. \_\_\_\_\_\_
3. \_\_\_\_\_\_
4. \_\_\_\_\_\_
5. \_\_\_\_\_\_

(*for credit, you must write the correct letters in the blanks*)

**8.**  and  are supplementary angles. , and . Find *x* and the measure of each angle.

*x =*

**

**

**9.** (1 point)



**10.** Given the diagram at right. (1 point each)

a. As a pair,  and are called what kind of angles?

****

b.  and have what relationship?

c. What would you call the angle pair  and ?

**11.** **.** Given  as shown in the figure. Solve for *x* and the measures of the two angles. Show the steps and check your result.

1 2

*x =*

**

**

**12.**  has endpoints *D*(−1, 6) and *G*(1, −4). What are the coordinates of its midpoint?(1 point)

**13.** Given the points *A*(−3, −7) and *B*(3, 1).

a. Plot and label the points and line segment on the graph.

b. What is the length *AB*. Show your calculation.

**14.** Plot and label line segment and its endpoints *A*(−5, 4) and *B*(7, −4).

b. What are the coordinates of the midpoint of ?

**15.** In simplified radical form, what is the distance between *L*(−4, 3) and *Z*(−10, 0)?   
(2 points)

**16**. In the given diagram the lines *x* || *y*, and  and .   
Solve for *x* (2 points)

**17.**

Given . What is ?

(1 point)

**18.** (1 point)



**19.** (1 point)



Use the given information to find the equation of the line. *You may use point-slope or slope-intercept form.*

**20.** The line has a slope of –3 and passes through (0, 5). (1 point)

**21.** The line passes through points (3, –1) and (–3, 5). (1 point)

**Determine whether the pairs of lines is *parallel, perpendicular,* or *neither.***(1 point)

**22.** ****

3*x* + *y* = 2

**23.** The measures of two interior angles of a triangle are 100 degrees and 35 degrees. What is the measure of the third angle? (1 point)

24.



Given . What must be true for lines *m* and *n* to be parallel? (1 point)

(1)  (3)  are complementary

(2)  (4)  are vertical angles

25. Right triangle *ABC* shown at right. and.   
  
What is the measure of angle C? (1 point)

A

B

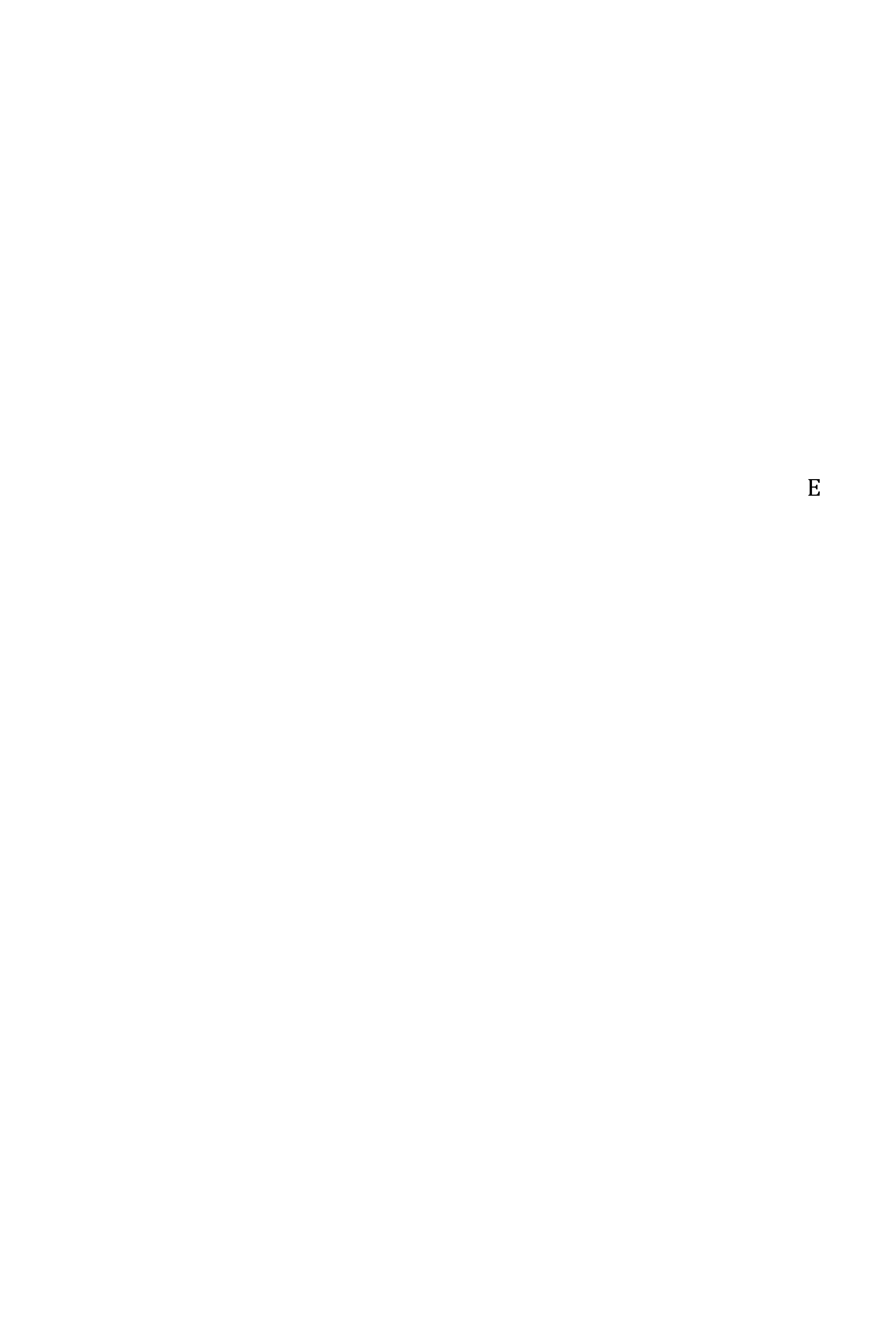
C

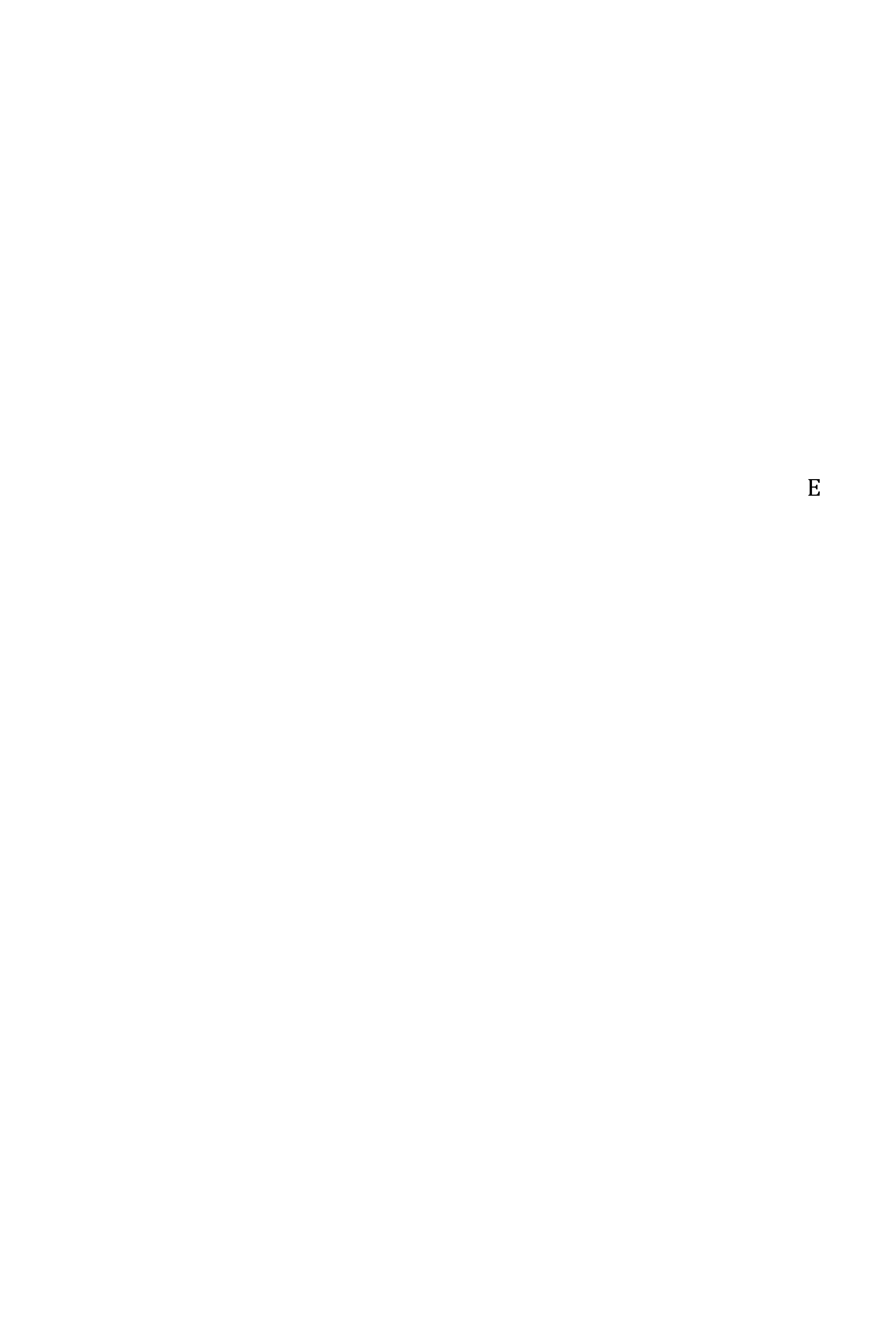
(1) 155 (3) 25

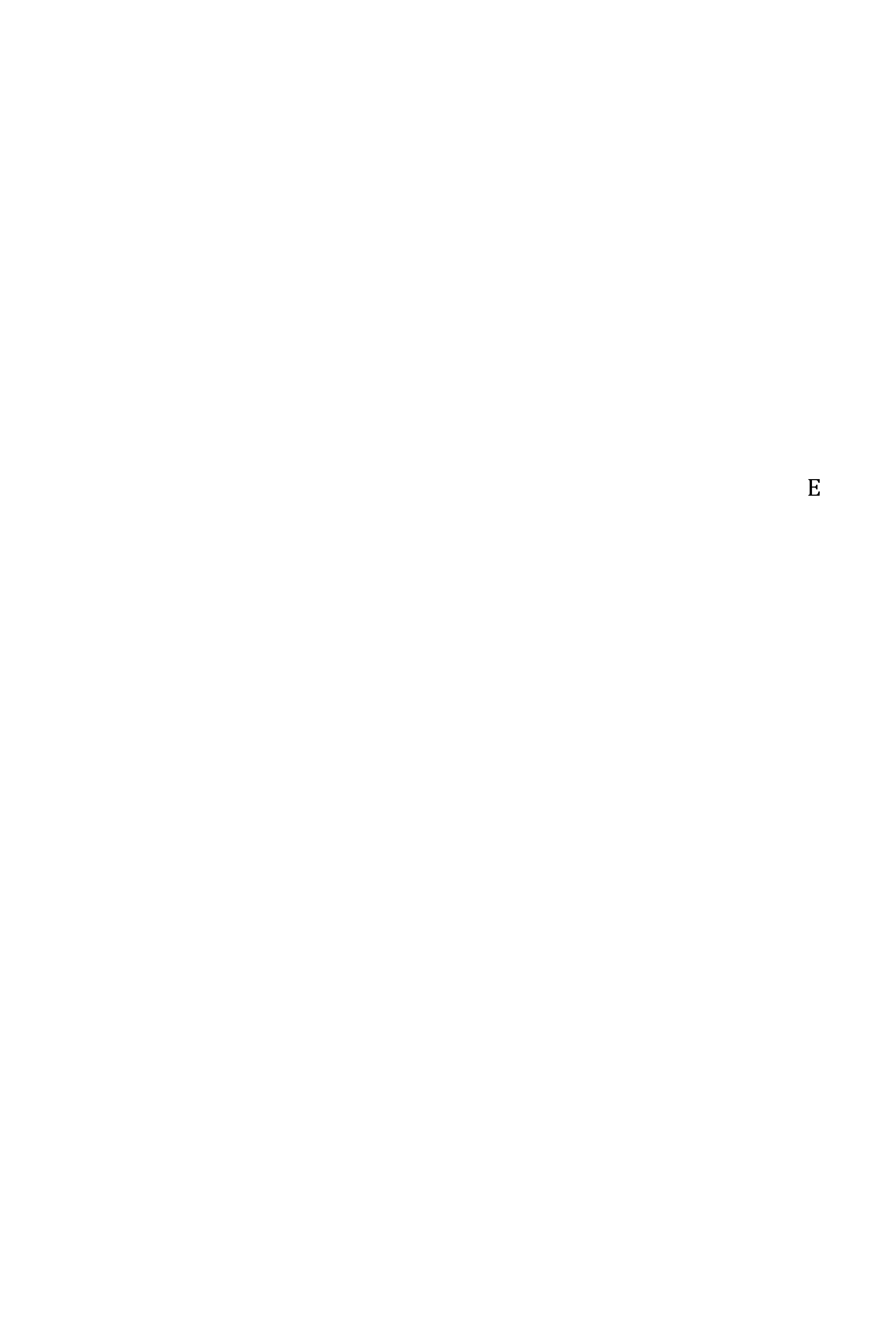
(2) 145 (4) 65

26. In the diagram of  at right,  is extended through *H.* (1 point)

E

F

G

H



(1) 165 (3) 15

(2) 65 (4) 50

27. with the given angle measures. Solve for *x.* (2 points)



1

2

3

**Construct an angle bisector of the given angle.**

A