Ch 3. Board Problems

① SET A = {1, 3, 5} SET B = {2, 4, 6}

A ∪ B = {

~~A ∩ B = {~~

A ∩ B = {

② IF 38 FLAGS HAVE RED, 20 HAVE BLUE, 13 HAVE BOTH AND 8 HAVE NEITHER,

A) DRAW A VENN DIAGRAM

B) HOW MANY HAVE RED NOT BLUE? ____

C) HOW MANY HAVE BLUE NOT RED? ____

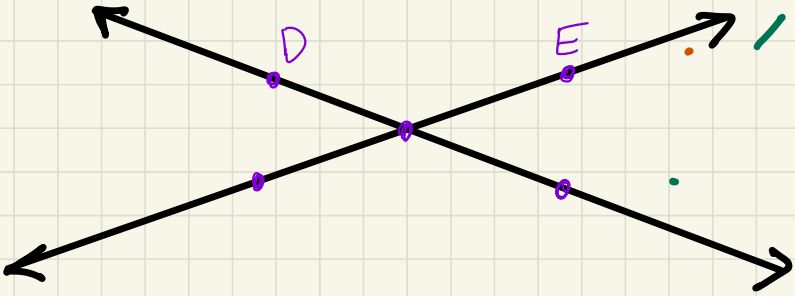
D) TOTAL FLAGS? ____

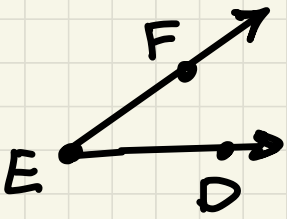
③ •⟶ is a _____

④ $\cong$ is _____

⑤ A plane has ____ dimensions

Ch. 3 - Angles

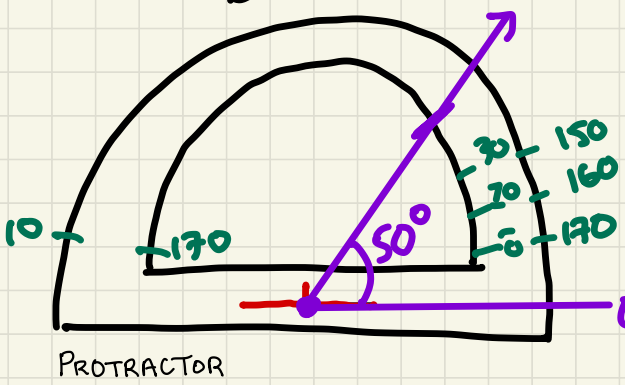




$0° < \_\_\_ < 90°$

$90° = \_\_\_$

$90° < \_\_\_ < 180°$



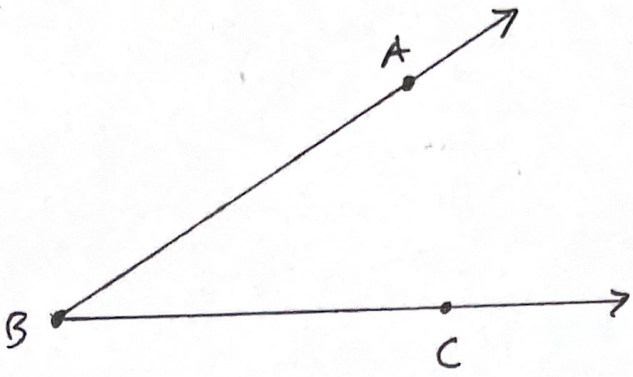
PROTRACTOR

$180° = \_\_\_$

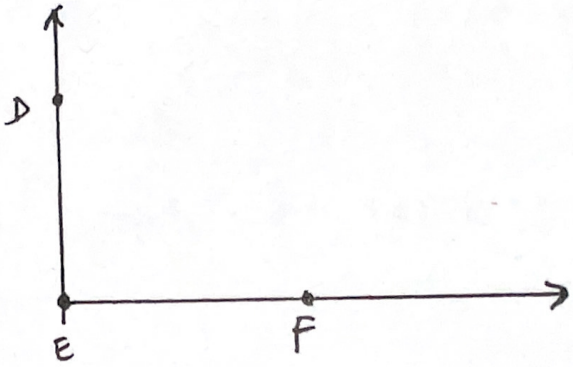
$180° < \_\_\_ < 360°$

$360° = \_\_\_$

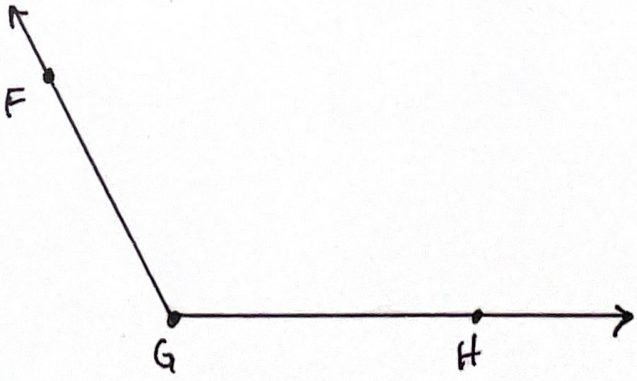
MEASURING ANGLES W/ PROTRACTOR



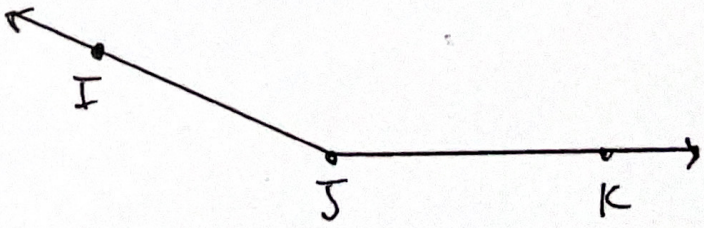
$m\angle ABC =$ ____



$m\angle DEF =$ ____



$m\angle FGH =$ ____



$m\angle IJK =$ ____

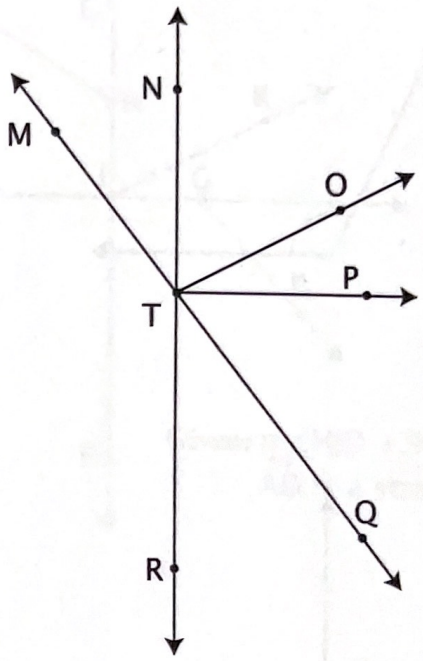
Use the drawing as necessary to answer the questions.

1. What is the vertex of ∠NTP?

2. What is the vertex of ∠PTO?

3. What is the vertex of ∠ABC? *(not shown)*

4. The common endpoint of $\overrightarrow{TR}$ and $\overrightarrow{TQ}$ is _____.



Given: m∠PTR = 90°
$\overleftrightarrow{NR}$ is a straight line.

5. What angle lies between the rays in #4?

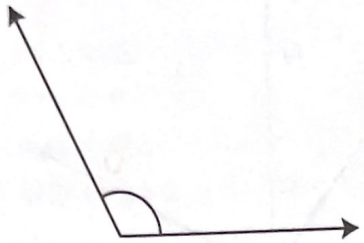
6. Points V, X, and W are not collinear. *(not shown)* The common endpoint of $\overrightarrow{WV}$ and $\overrightarrow{WX}$ is _____.

7. What angle is formed by the rays in #6?

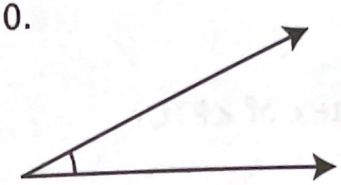
8. What is the vertex of the angle described in #7?

Measure the angles to the nearest whole degree.

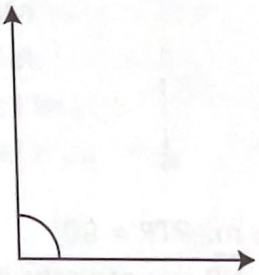
9.



10.



11.



Draw these angles.

12. $m\angle XYZ = 75°$

13. $m\angle 2 = 95°$

14. $m\angle \alpha = 170°$

LESSON PRACTICE

Simplify, then solve and check.

1. $-3A - 5 + 4A - 6 + 2A = 19$

2. $8B - 6 + 5B - 3 - 3B = 41$

3. $-5Y + 3 - 6Y + 2Y + 4 = 13$

4. $8Q - Q + 7 - 4 - 3Q = 7 + 4 \times 10$

5. $8M - 4M - 6 - 3 + 5M = 8^2 - 1$

6. $7C - 4C + 5 - 8 + C = 5^2 + 4$

7. $11A - 4A - 18 = 2A + A + 10$

8. $2B - 10B - 15 + 5 = 8B - 40 - 4B - 6$

9. $3C - 6 + 2C = 10C - 2C + 6$

10. $2D - 8 - 5D = -3D - 2D + 6$

11. $8K - 6 + 3K - 2K + 3 = 4 \times 33$

12. $B + B + B + 6 = 6B + 5 - 2B + 9$

13. $-2C + 12 = 2C - 6 + 6C - 12$

14. $10X - 3X - 9 + 3 - X = 51 \div 3 + 1$

SYSTEMATIC REVIEW

Solve for the unknown.

1. $X + 3 = 9$

2. $X + 6 = 10$

3. $2X + 5 = 11$

4. $4Q - 2 = 10$

5. $4X + 2 = 2X + 8$

6. $3Y + 5 = 2Y + 7$

7. $Q + 4 = 3Q - 6$

8. $2R + 8 = 3R - 2$

Larger or smaller? (Use <, >, or = in the oval.)

9. $9 - 3 \bigcirc |4 - 11|$

10. $|1 - 2 - 3| \bigcirc |2 \cdot 3|$

Solve.

11. $(-3) \cdot 4 + 6^2 \cdot (-3) + 5^2 =$

12. $(14 - 9 + 2^2) - (3 \div 6 \cdot 2^2) =$

13. $\frac{4}{3} \times \frac{6}{10} \div \frac{2}{3} =$

14. $(.17)(.8) =$

15. $(-8)(-7) =$

16. $(-4)^2 =$

QUICK TIP

The least common multiple (LCM) is useful for simplifying some equations before solving.

EXAMPLE 1 Solve $\frac{3}{4}A + \frac{1}{2} = \frac{7}{10}$

$4 = 2 \times 2$, $2 = 2$, $10 = 2 \times 5$
So LCM $= 2 \times 2 \times 5 = 20$

Multiply each term by 20. $\overset{5}{\cancel{(20)}}\frac{3}{\cancel{4}}A + \overset{10}{\cancel{(20)}}\frac{1}{\cancel{2}} = \overset{2}{\cancel{(20)}}\frac{7}{\cancel{10}}$

$15A + 10 = 14$

$A = 4/15$

Use the LCM of the denominators to simplify before solving for the unknown.

17. $\frac{1}{2} + \frac{2}{3} = \frac{1}{4}X$

18. $\frac{3}{5}X + \frac{3}{4} = 1\frac{1}{2}$

19. $\frac{1}{9}X + \frac{2}{3} = \frac{1}{5}$

20. $\frac{3}{8} - \frac{1}{5}X = \frac{3}{4}$

Solve for the unknown.

1. $Y - 3 = 10$

2. $2B - 5 = 13$

3. $3C + 6 = -9$

4. $2D - 5 = 1$

5. $4E - 3 = -3$

6. $3X + 8 = -2X - 2$

7. $2Y - 2 = 3Y - 6$

8. $Z + 8 = 2Z + 18$

Larger or smaller? (Use <, >, or = in the oval.)

9. $|3 \times 2 \times (-2)|$ ◯ $24 \div (-3)$

10. $|17 - 3 - 20|$ ◯ $|7 + 0 + 1|$

Solve.

11. $[(6 - 2) \times 5^2 - 10] \div 5^2 =$

12. $(-7 - 6)^2 - (4 + 5 - 3)^2 =$

13. $\frac{5}{6} \times \frac{3}{7} \div \frac{2}{3} =$

14. How many groups of 12¢ are there in $1.68?

Use the answer to #15 to simplify #16, and then solve for X.

Hint: First make improper fractions.

15. Find the LCM of 2, 5, and 10.

16. $1\frac{1}{5}X + \frac{7}{10} = 2\frac{1}{2}X$

QUICK TIP

The LCM may also be used to simplify equations involving decimals.

EXAMPLE 1 Solve .05X - .35 = 2.7 If the decimals were written as fractions, the denominators would be 100 and 10. The LCM is 100.

Multiply each term by 100 → (100).05X - (100).35 = (100)2.7 → 5X - 35 = 270

X = 61

EXAMPLE 2 Solve .2X + 5 = 2.4

Multiply each term by 10 → (10).2X + (10)5 = (10)2.4

2X + 50 = 24 → X = -13

Use the LCM to make whole numbers before solving for the unknown.

17. .83 + .04X = .325

18. .18 + .2X = .17

19. .8X + 1.3 = 7 + .24

20. 8.2 - 4 = .08X