LESSON

WARN-UP

F

A number is divisible by ...

- 2 if the last digit is even.
- 4 if the last two digits can be divided by 4.
- 8 if the last three digits can be divided by 8.
- 5 if the last digit is 0 or 5.
- 10 if the last digit is 0.
 - 3 if the sum of the digits can be divided by 3.
 - 6 if the number can be divided by 2 and by 3.
- 9 if the sum of the digits can be divided by 9.

A number ending in ... one zero is divisible by 2. two zeros is divisible by 2 and 4.

three zeros is divisible by 2, 4, and 8...

to arrest the whole numbers from I to that are divisors of Example 4 Which whole numbers from 1 to 10 are divisors of 9060?

Solution In the sense used in this problem, a divisor is a factor. The number 1 is a divisor of any whole number. As we apply the tests for divisibility, we find that 9060 passes the tests for 2, 4, 5, and 10, but not for 8. The sum of its digits (9 + 0 + 6 + 0) is 15, which can be divided by 3 but not by 9. Since 9060 is divisible by both 2 and 3, it is also divisible by 6. The only whole number from 1 to 10 we have not tried is 7, for which we have no simple test. We divide 9060 by 7 to find that 7 is not a divisor. We find that the numbers from 1

to 10 that are divisors of 9060 are 1, 2, 3, 4, 5, 6, and 10.

LESSON PRACTICE

DV Due suns of 20

lo les ent elemen

Practice set* List the whole numbers that are factors of each number:

a. 25 b. 24 c. 23

HAR DELIG BELLE BEXDERED LINE BILLING

List the whole numbers from 1 to 10 that are factors of each number:

d. 1260

e. 73,500 f. 3600

- g. List the single-digit divisors of 1356.
- h. The number 7000 is divisible by which single-digit numbers?

MIXED PRACTICE

36

Problem set

I most atemme

- 1. If the product of 10 and 20 is divided by the sum of 20 and 30, what is the quotient?
- 2. (a). List all the common factors of 30 and 40.
- (b) Find the greatest common factor of 30 and 40.
 - 3. Use braces, an ellipsis, and digits to illustrate the set of (4) negative odd numbers.
 - 4. Use digits to write four hundred seven million, six · thousand, nine hundred sixty-two.
- 5. List the whole numbers from 1 to 10 that are divisors of To also to 2100. (6) 12,300. Or a instrumental made and addition Astronomic Library
- 6. Replace the circle with the proper comparison symbol. Then write the comparison as a complete sentence using words to write the numbers.

atigin with the integrated and the latter of
$$-7\,\bigcirc\,-11$$
 and the habitain and man statistic of at the second states of the second states and the second states are second states as the second states are se

- 7. The number 3456 is divisible by which single-digit bein for over (6) numbers?
- of 7 vd dade chivibev. Jeer admits on overlaw fridwind. 8. Show this subtraction problem on a number line: 2 - 5 The first brief of the (4) of the second through the personnel from inches the party that the
 - 9. Write 6400 in expanded notation.

Find each missing number:

10.
$$x + \$4.60 = \$10.00$$
11. $p - 3850 = 4500$
12. $8z = \$50.00$
13. 7
(3)
4
14. $1426 - k = 87$
(3)
8
15. $\frac{990}{8} = 45$

$$p$$
 . 1 . 6 . 6 . 8

16.
$$\frac{Z}{8} = 32$$
(3) $\frac{Z}{8} = 32$

Simplify:

17.
$$\frac{1225}{35}$$

18.
$$800$$
 $^{(1)} \times 50$

22.
$$7 \cdot 11 \cdot 13$$

23. 9)
$$43,271$$

24.
$$3625 + 59 + 570 + 8$$

25.
$$48¢ + $8.49 + $14$$

26.
$$1000 - (430 - 58)$$

$$29. \frac{\$43.50}{10}$$

30. Name the property illustrated by this equation, and describe the meaning of the property.

In a size balles agains and beautiful
$$x\cdot 5=5x+9$$
 . The mass re-

YOU SINGUISELL FROM

very soon teats atmed a la chiquin bos softlish displaying light as the standard or servery s believ bloow laneiscentlageth a pritegrater of the called the first point in congels from tool official broadlanel and and ablory of the first the state of to nevo seng ton Muco binow legolegostib-owijelo sipeguseCaeris equals live o bus them. Aliquis struction leaunned streife mide mobile and a blicey langianamib-one A Jaixe ton bluow "rebau" send a to stanguasO, digeb non jubiw, rediger and dignot and

sertife of to technic tove same and blues black langlanding no after bus kined even ylao bluce yeaft kinethi tertte te abia the middle told a some block

civil accention of a state that second votals ow grientons al denoted and the interest and the second control of the second cont al agencol lasse in a lange A englansmin on and daidw diction and the farmer to the All Makes Rischer Committee in the Section of the Section Committee of the Section Committe dots and usually name them well mentalistics which some vileast bars shot

38 Saxon Math 8/7—Homesch

LESSON

LINES

WARM-UP

Facts Pra

Mental N

a. 5 -

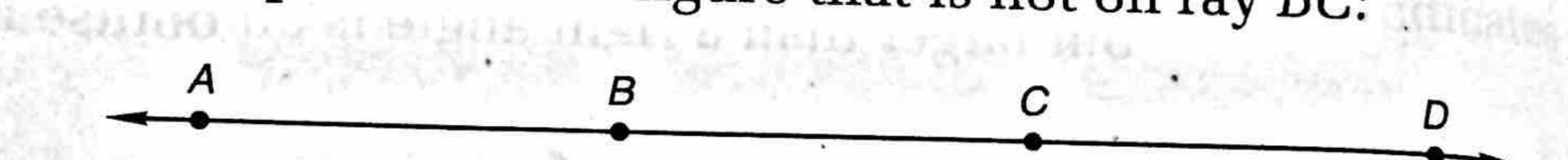
d. 340

g. Star

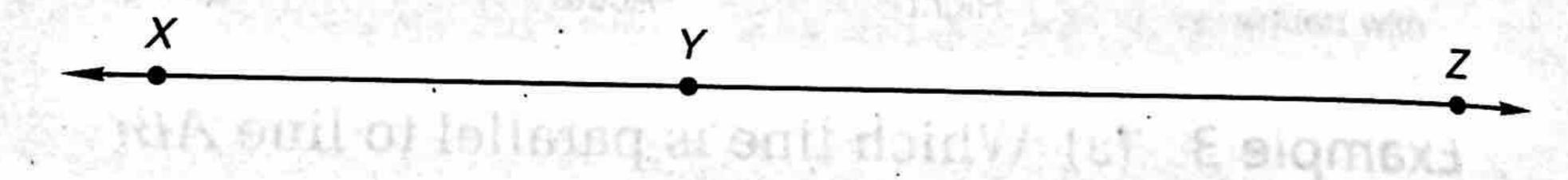
- Example 5 A power pole with two cross pieces can be represented b_y as norizontal (a) Name a vertical segment. (b) Name a horizontal segment. (c) Name a segment perpendicular to CD. Solution (a) \overline{AB} (or \overline{BA})
 - (b) \overline{CD} (or \overline{DC}) or \overline{EF} (or \overline{FE})
 - (c) \overline{AB} (or \overline{BA})

LESSON PRACTICE

Practice set **a.** Name a point on this figure that is not on ray *BC*:



b. In this figure XZ is 10 cm, and YZ is 6 cm. Find XY.



- c. Draw two parallel lines.
- d. Draw two perpendicular lines.
- e. Draw two lines that intersect but are not perpendicular. What word describes the relationship of these lines?

the second of th

- f. Draw a right angle.
- g. Draw an acute angle.
- the friend out out the fall h. Draw an obtuse angle.
- i. Two intersecting segments are drawn on the board. One segment is vertical and the other is horizontal. Are the segments parallel or perpendicular?

MIXED PRACTICE

Problem set

- 1. If the product of two one-digit whole numbers is 35, what is the sum of the same two numbers?
- 2. Name the property illustrated by this equation:

$$-5 \cdot 1 = -5$$

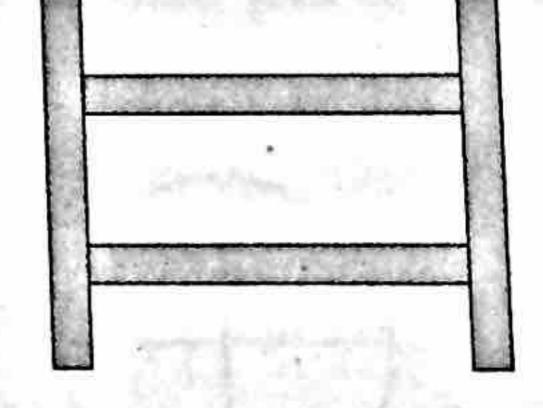
- 3. List the whole number divisors of 50.
- 4. Use digits and symbols to write "Two minus five equals negative three."
- 5. Use only digits and commas to write 90 million.
- 6. List the single-digit factors of 924.
- 7. Arrange these numbers in order from least to greatest:

$$-10, 5, -7, 8, 0, -2$$

8. Use words to describe the following sequence. Then find the next three numbers in the sequence.

9. To build a fence, Megan dug holes in the ground to hold the posts upright. Then she nailed rails to connect the posts. Which fence parts were vertical, the posts or the rails?

Votant Telephone is un oforme delider Idi



10. (a) List the common factors of 24 and 32.

- (b) Find the greatest common factor of 24 and 32.
- 11. How many units is it from 3 to -4 on a number line?

Find each missing number:

12.
$$6 \cdot 6 \cdot z = 1224$$

12. 6 · 6 ·
$$z = 1224$$
 13. \$100.00 - $k = 17.54

14.
$$w - 98 = 432$$

15.
$$20x = $36.00$$

$$16. \frac{W}{20} = 200$$

$$17. \frac{300}{x} = 30$$

transemental to the monday 18. Does the quotient of $4554 \div 9$ have a remainder? H_{0w} can you tell without dividing?

the first between the fill without own and the course Simplify:

20.
$$476$$
 $^{(1)}$ × 38

22.
$$49 + 387 + 1579 + 98$$

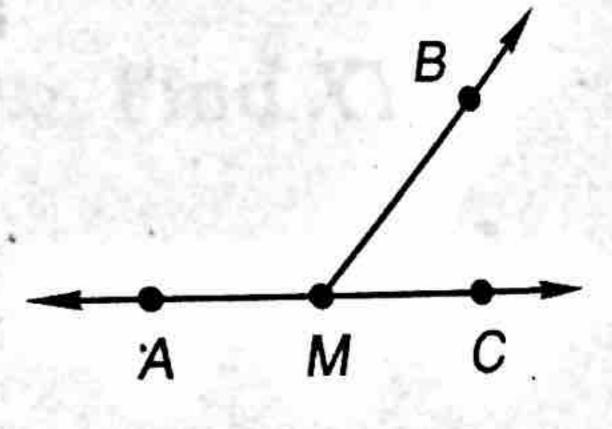
25. Compare:
$$4000 \div (200 \div 10) \bigcirc (4000 \div 200) \div 10$$

26. Evaluate each expression for a = 200 and b = 400:

(a).
$$ab$$
 (b) $a - b$

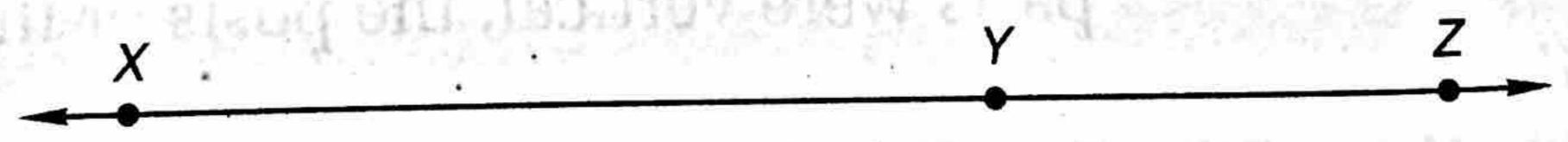
(c)
$$\frac{b}{a}$$

- 27. Refer to the figure at right to answer (a) and (b).
 - (a) Which angle is an acute angle?
 - (b) Which angle is a straight angle? Enlug gun ingative and the Duting Office



28. What type of angle is formed by perpendicular lines? to a chimate and the state of the same

Refer to the figure below to answer problems 29 and 30.

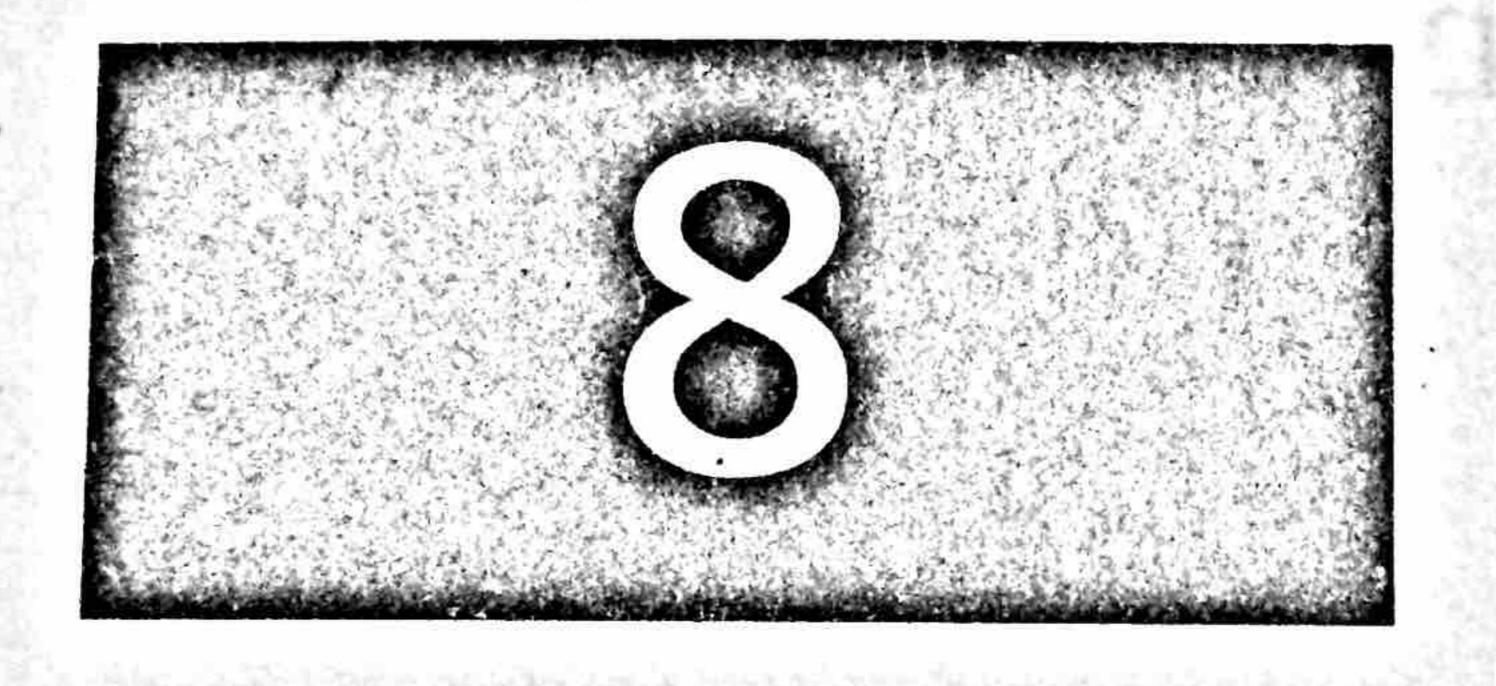


29. Name three segments in this figure. (7). Film 20.5. Apr 20.11 Julian Halli III Oct 32.11 Amount A.B.

tomil melmus a no fivel and a month status (main works in

30. If you knew mXY and mYZ, describe how you wou find mXZ.

E 5 5 0 N

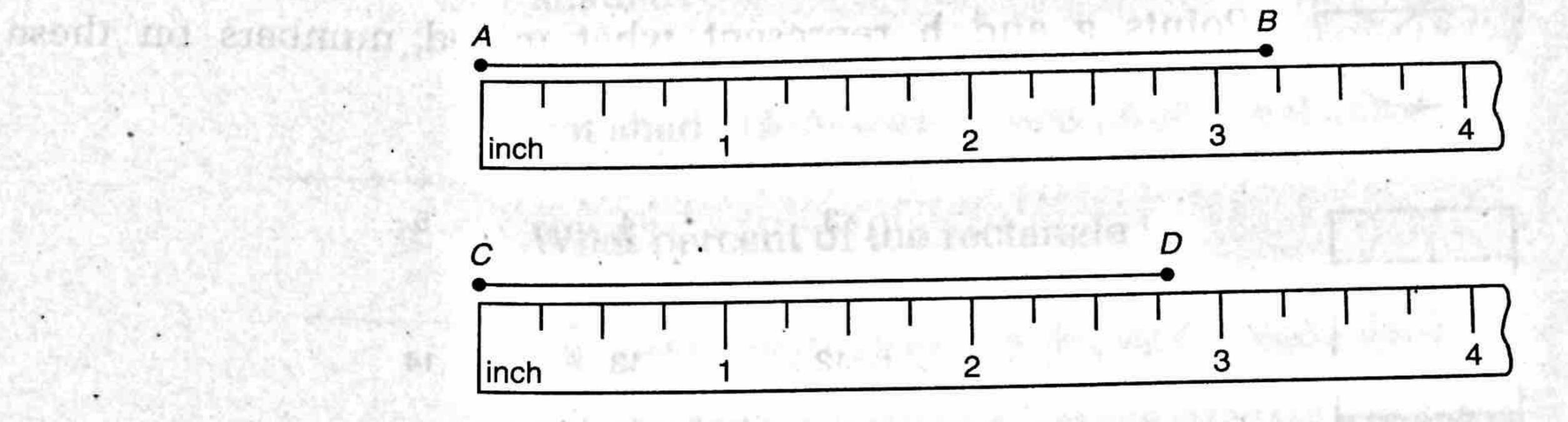


Fract: Inch:

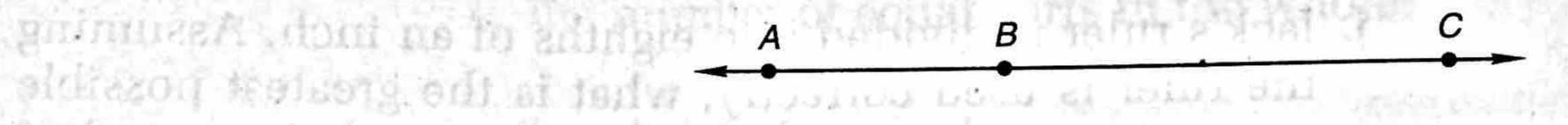
WARM-UP

Facts Pra

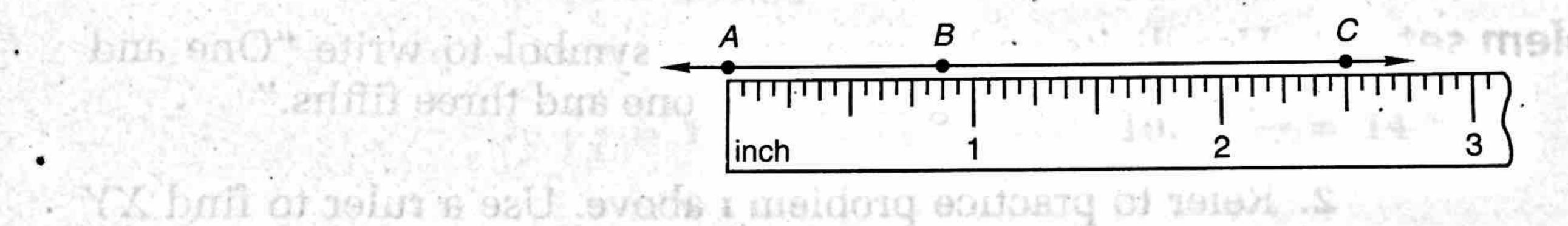
Mental



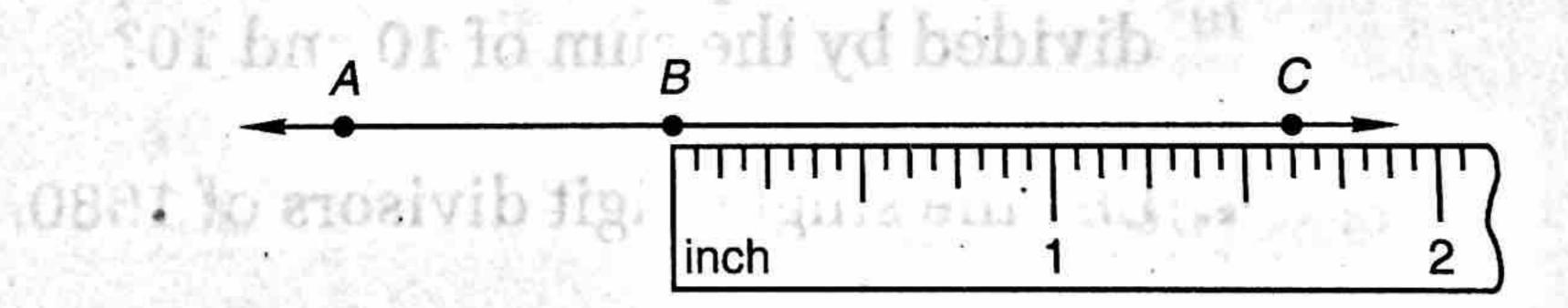
Example 4 Use an inch ruler to find AB, BC, and AC to the nearest sixteenth of an inch.



Solution From point A we find AB and AC. We measure from the center of one dot to the center of the other dot. AB is about $\frac{7}{8}$ inches, and AC is about $2\frac{1}{2}$ inches.

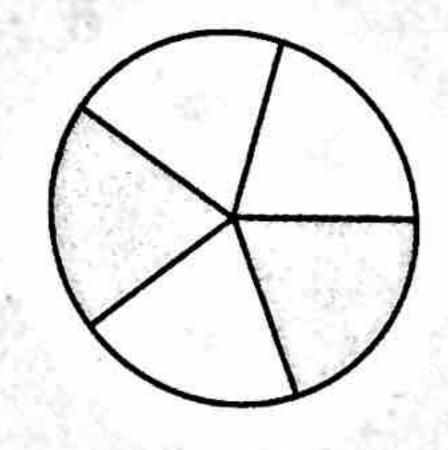


We move the zero mark on the ruler to point B to measure BC. We find BC is about $1\frac{5}{8}$ inches.



LESSON PRACTICE

Practice set a. What fraction of this circle is not shaded?



b. What percent of this circle is not shaded?

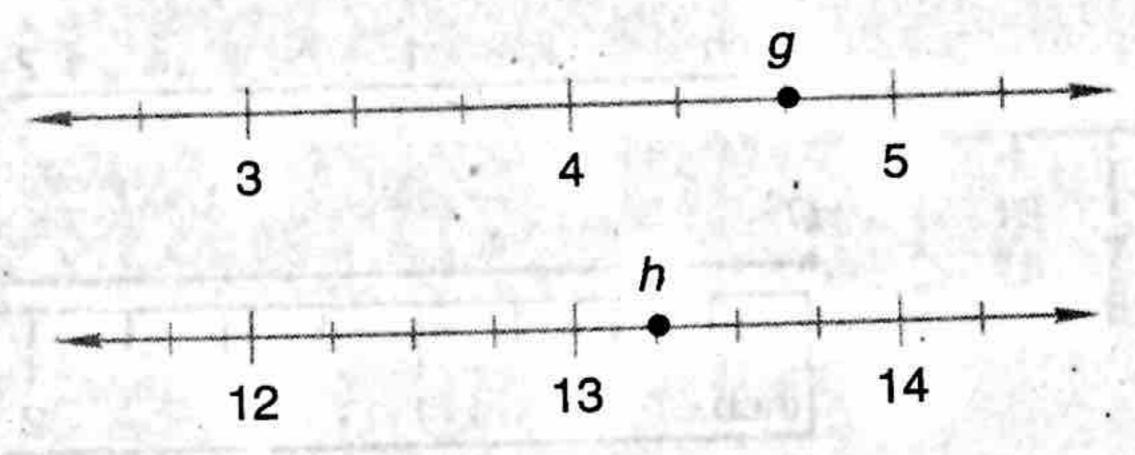
c. Half of a whole is what percent of the whole?

50

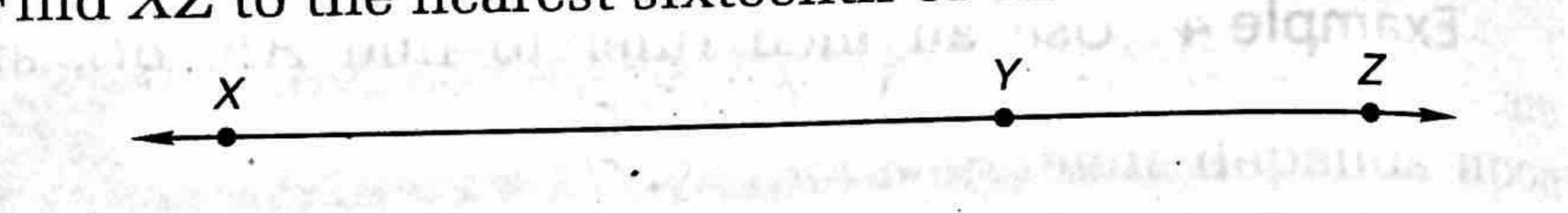
. Draw and shade circles to illustrate each fraction, $mi_{\chi_{\theta d}}$ number, or percent: d. $\frac{2}{3}$

d.
$$\frac{2}{3}$$

Points g and h represent what mixed numbers on these number lines?



i. Find XZ to the nearest sixteenth of an inch.



j. Jack's ruler is divided into eighths of an inch. Assuming the ruler is used correctly, what is the greatest possible measurement error that can be made with Jack's ruler? mit sugal-winascal Express your answer as a fraction of an inch. Brundis si HA Job te. the analysis in one at the line andouted CD billow with

MIXED PRACTICE

Problem set

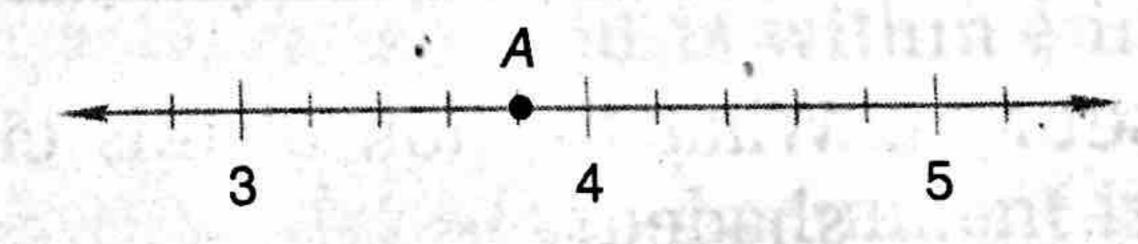
1. Use digits and a comparison symbol to write "One and (4,8) three fourths is greater than one and three fifths."

2. Refer to practice problem i above. Use a ruler to find XY $^{(8)}$ and YZ.

3. What is the quotient when the product of 20 and 20 is divided by the sum of 10 and 10?

4. List the single-digit divisors of 1680.

5. Point A represents what mixed number on this number line?

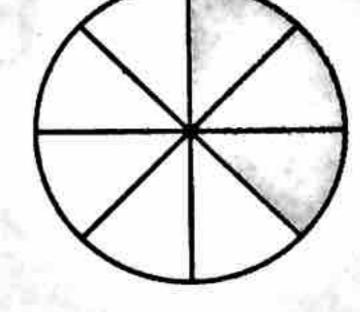


6. (a) Replace the circle with the proper comparison symbol.

$$3 + 2 \bigcirc 2 + 3$$

(b) What property of addition is illustrated by this comparison?

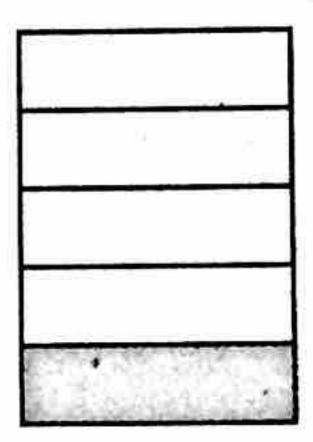
- 7. Use words to write 32500000000. -- Iscallespes out to Branz-literal -- 13.88
- 8. (a) What fraction of the circle is shaded?



(b) What fraction of the circle is not shaded?

Refer to the figure at report of return

- 9. (a) What percent of the rectangle is shaded?
 - (b) What percent of the rectangle is not shaded?



10. What is the name of the part of a fraction that indicates the number of equal parts in the whole?

AND I of telephone that being the bearing the bearing the contract of the cont

Find each missing number:

and the recent the motations Of and QAP

11.
$$a - \$4.70 = \$2.35$$

12.
$$b + \$25.48 = \$60.00$$

13.
$$8c = $60.00$$

14. 10,000
$$-d = 5420$$

15.
$$\frac{e}{15} = 15$$

15.
$$\frac{e}{15} = 15$$
 16. $\frac{196}{f} = 14$

17.
$$8 + 9 + 8 + 8 + 9 + 8 + n = 60$$

franctions add by measuring or by adding 19 in and 15 in.

Simplify:

18.
$$400$$

19.
$$79¢$$

21.
$$6000 \div 50$$

22.
$$20 \cdot 10 \cdot 5$$

23.
$$\frac{$27.00}{18}$$

24.
$$\frac{3456}{6}$$

25. If *t* is 1000 and *v* is 11, find

(a)
$$t - v$$

(b)
$$v - t$$

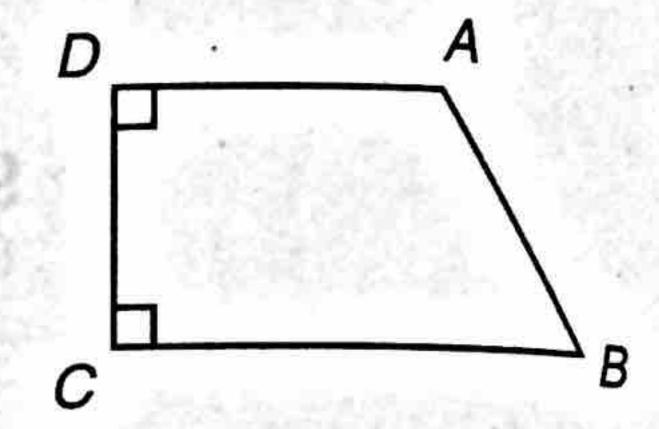
Saxon Math 8/7—Homeschool

-HERDER - Breez OINGOILE

26. The rule of the following sequence is k = 3n - 1. What is the tenth term of the sequence?

27. Compare:
$$416 - (86 + 119) \bigcirc (416 - 86) + 119$$

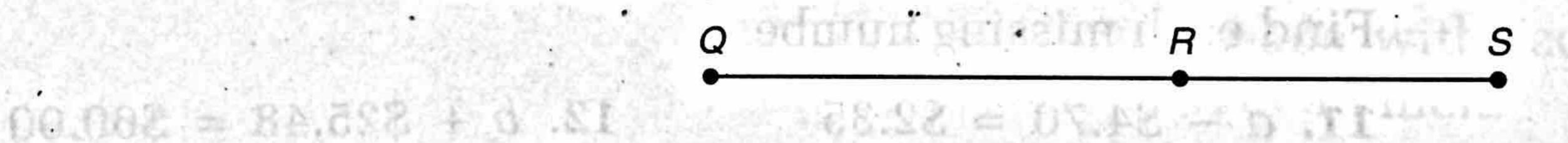
Refer to the figure at right to answer problems 28 and 29.



- 28. Name the acute, obtuse, and right angles.
- 29. (a) Name a segment parallel to \overline{DA} .

at afunction to the partial title (d)

- (b) Name a segment perpendicular to \overline{DA} .
- **30.** Referring to the figure below, what is the difference in \overline{QR} and \overline{QR} ?



LESSON

Proble Problem Problem

WARM-UP

Facts Pra

Mental N.

a. \$7.5

 \mathbf{d} . (3 \times

Practice set Follow the four-step method shown in this lesson for each problem. Along with each answer, include the equation you used to solve the problem.

- a. Billy stood on the scales. Billy weighed 118 pounds. Then both Lola and Billy stood on the scales. Together they weighed 230 pounds. How much did Lola weigh?
- b. Lamar cranked for a number of turns. Then Lurdes gave the crank 216 turns. If the total number of turns was 400, how many turns did Lamar give the crank?
- c. At dawn 254 horses were in the corral. Later that morning Tex found the gate open and saw that only 126 horses remained. How many horses got away?
- d. Cynthia had a lot of paper. After using 36 sheets for a report, only 164 sheets remained. How many sheets of paper did she have at first?
- e. Write a story problem about combining that fits this equation: al againeachtab nais E

$$$15.00 + T = $16.13$$

f. Write a story problem about separating that fits this equation:

Af to entest out tall ist it.

TAR bro of to HOD and sided of 151.

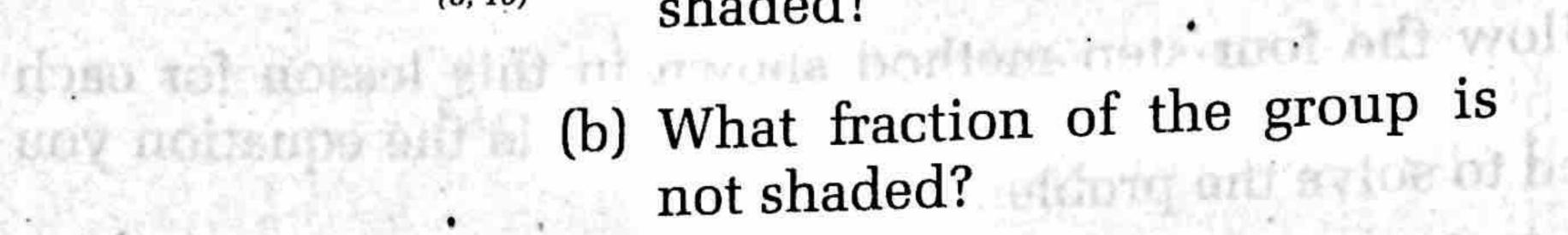
Les branches and to state the second
$$32 - S = 25$$

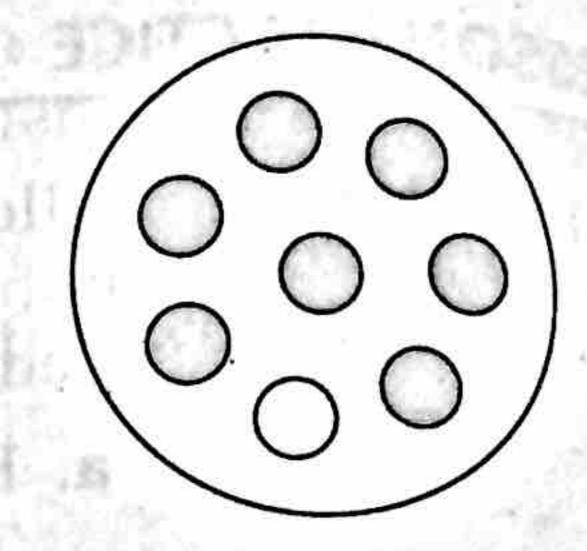
MIXED PRACTICE

- 1. As the day of the festival drew near, there were 200,000 people in the city. If the usual population of the city was 85,000, how many visitors had come to the city?
 - 2. Syd returned from the store with \$12.47. He had spent \$98.03 on groceries. How much money did he have when he went to the store?
 - 3. Exactly 10,000 runners began the marathon. If only 5420 runners finished the marathon, how many dropped out along the way?

afdeleve slou bibelou.

4. (a) What fraction of the group is shaded?





(c) What percent of the group is not shaded? aracou.

5. (a) Arrange these numbers in order from least to greatest: .001 saw some la secondaria de la secondaria $\frac{1}{2}$, 0, -2, 1

$$\frac{1}{2}$$
, 0, -2, 1

(b) Which of these numbers is not an integer? RELEASE TRADE TRADE CONTRACT C

Example 4 The Section of the State of the St

agained age years that were he were not ment out for hard was the 6. A 35-inch ribbon was cut into 8 equal lengths. How long was each piece?

a tol steeds de grist reffa course for of a field side, people bis dog at the 7. Use digits and symbols to write "The product of one and (4) two is less than the sum of one and two."

8. Subtract 89 million from 100 million. Use words to write the difference.

9. (a) List the factors of 16. aid en son en (6)

Etars - T'a notars

(b) List the factors of 24.

(c) Which numbers are factors of both 16 and 24?

(d) What is the GCF of 16 and 24?

Find each missing number:

10.
$$8000 - k = 5340$$

10.
$$8000 - k = 5340$$
 11. $1320 + m = 1760$

12.
$$4 \cdot 9 \cdot n = 720$$
 13. $\$126 + r = \375

14.
$$\frac{169}{s} = 13$$

16. Compare: $100 - (5 \times 20) \bigcirc (100 - 5) \times 20$

Simplify:

17.
$$1\frac{5}{9} + 1\frac{5}{9}$$

18.
$$\frac{5}{3} \times \frac{2}{3}$$

19.
$$135$$
 (1) \times 72

20.
$$\frac{1000}{40}$$

23.
$$\frac{5}{9} \cdot \frac{1}{3} \cdot \frac{1}{2}$$

$$\frac{24.}{8} + \left(\frac{3}{8} - \frac{1}{8}\right)$$

- 25. Write $3\frac{3}{4}$ as an improper fraction. (10)
- 26. Which choice below is the best estimate of the portion of the rectangle that is shaded?



A.
$$\frac{1}{4}$$

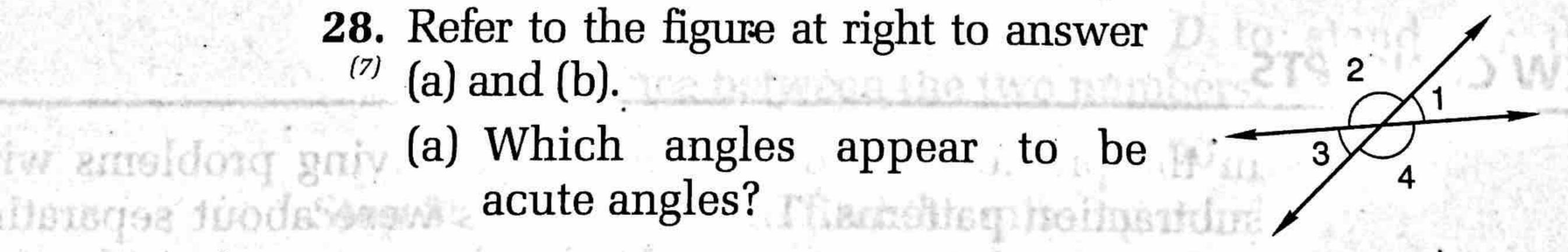
B.
$$\frac{1}{2}$$

A.
$$\frac{1}{4}$$
 B. $\frac{1}{2}$ C. 40%

27. What are the next four numbers in this sequence? (2, 8)

$$\frac{1}{8}$$
, $\frac{1}{4}$, $\frac{3}{8}$, $\frac{1}{2}$, ...

- 28. Refer to the figure at right to answer (a) and (b).
- (a) Which angles appear to be



- (b) Which angles appear to be obtuse angles?
- **29.** Use an inch ruler to draw \overline{AC} $3\frac{1}{2}$ inches long. On \overline{AC} mark point B so that AB is $1\frac{7}{8}$ inches. Now find $B\widetilde{C}$.
- **30.** If $n \div m$ equals $\frac{7}{8}$, what does $m \div n$ equal? now much greater or now much less is called the constant of th

sortored in a tallens a first divine