Reteaching with Practice

For use with pages 498-505

NAME



Finding the Length of a Segment EXAMPLE 1

a. In the diagram, $\overline{AB} \parallel \overline{CD}$, BD = 15, AC = 10, and CE = 18. What is the length of \overline{DE} ?

b. In the diagram, $\overline{NR} \parallel \overline{PQ}$, MQ = 42, MN = 13, and NP = 8. What is the length of \overline{RQ} and \overline{MR} ?



В

15

SOLUTION

a. $\frac{DE}{BD} = \frac{CE}{AC}$ Triangle Proportionality Theorem $\frac{DE}{15} = \frac{18}{10}$ Substitute. $DE = \frac{15(18)}{10} = 27$ Multiply each side by 15 and simplify.

LESSON



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b. Let RQ = x. Then MR = 42 - x.

$\frac{MR}{RQ} = \frac{MN}{NP}$	Triangle Proportionality Theorem
$\frac{42-x}{x} = \frac{13}{8}$	Substitute.
8(42 - x) = 13x	Cross product property
336 - 8x = 13x	Distributive property
16 = x	Simplify.

So, RQ = 16 and MR = 42 - 16 = 26.

Exercises for Example 1

Find the value of each variable.





EXAMPLE 2

Using Proportionality Theorems

In the diagram, \overline{MP} bisects $\angle M$. Find *NP*. **SOLUTION**

 $\frac{NP}{PQ} = \frac{MN}{MQ}$ $\frac{NP}{4} = \frac{16}{18}$ $NP = \frac{4(16)}{18} \approx 3.6$

Apply Theorem 8.7.

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Substitute.

Multiply each side by 4 and simplify.

Exercises for Example 2

Find the value of each variable.







91

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