

Similar figures/Solving proportions

Date

Period

Solve each proportion.

1)  $\frac{10}{4} = \frac{x-10}{5}$

$50 = 4x - 40$

$90 = 4x$

$x = 22.5$

2)  $\frac{k+6}{2} = \frac{9}{6}$

$6k + 36 = 18$

$6k = -18$

$k = -3$

3)  $\frac{x-6}{2} = \frac{8}{6}$

$6x - 36 = 16$

$x = 8.7$

4)  $\frac{v+10}{5} = \frac{3}{4}$

$4v + 40 = 15$

$v = -6.25$

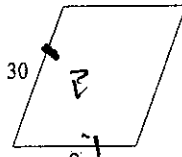
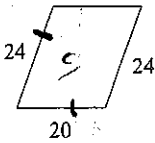
5)  $\frac{5}{10} = \frac{8}{r-4}$

$5r - 20 = 80$

$r = 20$

The polygons in each pair are similar. Find the missing side length.

6)

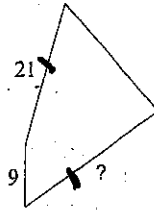


~~$\frac{24}{30} = \frac{20}{x}$~~

$600 = 24x$

$x = 25$

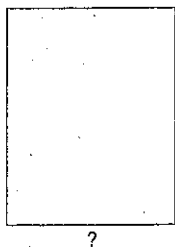
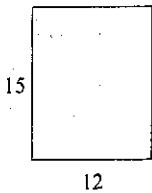
7)



$\frac{21}{14} = \frac{x}{16}$

$x = 24$

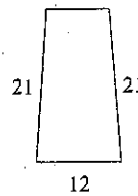
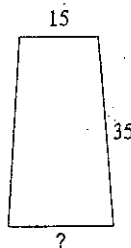
8)



$\frac{15}{25} = \frac{12}{x}$

$x = 20$

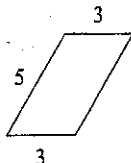
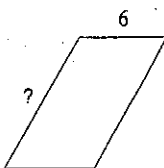
9)



$\frac{15}{x} = \frac{35}{21}$

$x = 9$

10)

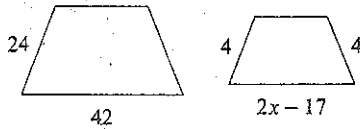


$\frac{6}{3} = \frac{x}{5}$

$x = 10$

Solve for  $x$ . The polygons in each pair are similar.

11)



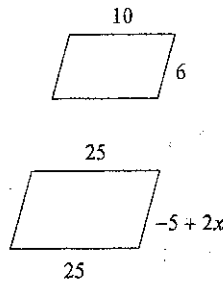
$$\frac{24}{4} = \frac{42}{2x-17}$$

$$42 = 12x - 102$$

$$144 = 12x$$

$$\boxed{x=12}$$

12)



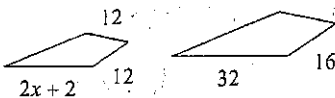
$$\frac{10}{6} = \frac{25}{-5+2x}$$

$$-10 + 4x = 30$$

$$4x = 40$$

$$\boxed{x=10}$$

13)



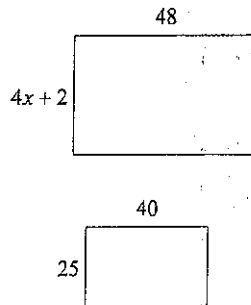
$$\frac{12}{2x+2} = \frac{32}{16}$$

$$96 = 8x + 8$$

$$88 = 8x$$

$$\boxed{x=11}$$

14)



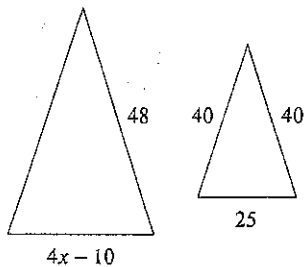
$$\frac{4x+2}{25} = \frac{48}{40}$$

$$20x + 10 = 150$$

$$20x = 140$$

$$\boxed{x=7}$$

15)



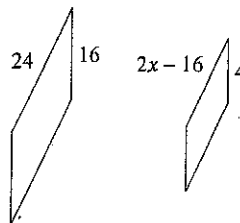
$$\frac{48}{4x-10} = \frac{40}{25}$$

$$20x - 50 = 150$$

$$20x = 200$$

$$\boxed{x=10}$$

16)



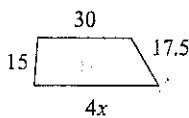
$$\frac{24}{2x-16} = \frac{16}{4}$$

$$8x - 64 = 24$$

$$8x = 88$$

$$\boxed{x=11}$$

17)

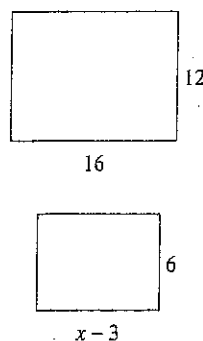


$$\frac{30}{4x} = \frac{36}{48}$$

$$24x = 240$$

$$\boxed{x=10}$$

18)



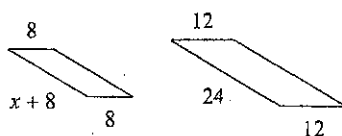
$$\frac{12}{16} = \frac{6}{x-3}$$

$$2x - 6 = 16$$

$$2x = 22$$

$$\boxed{x=11}$$

19)



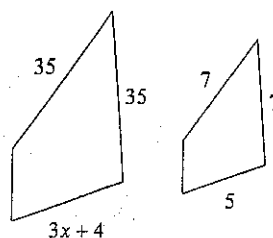
$$\frac{8}{x+8} = \frac{12}{24}$$

$$48 = 3x + 24$$

$$24 = 3x$$

$$\boxed{x=8}$$

20)



$$\frac{35}{3x+4} = \frac{7}{5}$$

$$25 = 3x + 4$$

$$21 = 3x$$

$$\boxed{x=7}$$