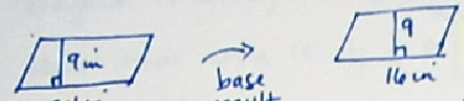
10.5

p. 713-715 (9-33) odd



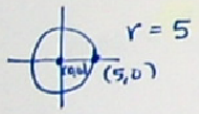
$A = 9(24)$
$= 216 \text{ in}^2$

$A = 9(16)$
$= 144 \text{ in}^2$

Compare area $216 \cdot \frac{2}{3} = 144$

The area is multiplied by $\frac{2}{3}$

11.

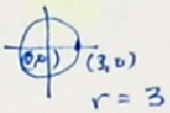


$C = \pi d$
$= 10\pi$

$A = \pi r^2$
$= \pi (5)^2$
25π

$5 \cdot \frac{3}{5} = 3$

radius mult by $\frac{3}{5}$



$C = 6\pi$

$A = 9\pi$

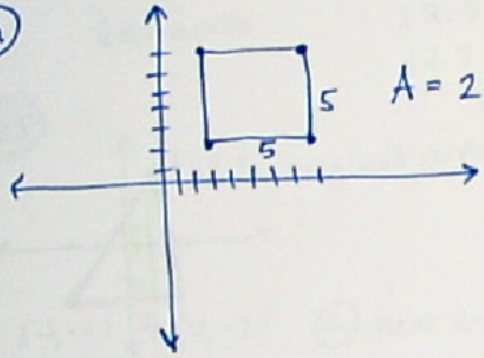
$10\pi \cdot \frac{3}{5} = 6\pi$

$25\pi \cdot \left(\frac{3}{5}\right)^2 = 25\pi \cdot \frac{9}{25} = 9\pi$

Circumference is mult by $\frac{3}{5}$

Area is mult by $\left(\frac{3}{5}\right)^2$ or $\frac{9}{25}$

13.



$A = 25$

triple

$A = 3(25)$
$= 75$

$A = 75$
$\Delta^2 = 75$
$\sqrt{\Delta^2} = \sqrt{75}$
$\Delta = 5\sqrt{3}$

5 changes into $5\sqrt{3}$

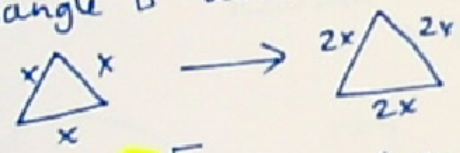
side length is multiplied by $\sqrt{3}$

15. If both diagonals are multiplied by 8, then the area increases by $8 \cdot 8$ or 64

17. If the base is mult. by 4 and height by 7, then the area increases by $7 \cdot 4 = 28$

(19) If diagonal of a square is divided by 4 or mult by $\frac{1}{4}$, then the other diagonal is also, using $\frac{d_1 \cdot d_2}{2}$ shows new area is $\frac{1}{4} \cdot \frac{1}{4}$ or $\boxed{\frac{1}{16}}$ of the original

(21) If perimeter of an equilateral triangle is doubled



Area $= \frac{x^2\sqrt{3}}{4}$ Area $= \frac{(2x)^2\sqrt{3}}{4}$

Area increases by mult. by 2^2 or $\boxed{4}$

by mult. by 2

watch out!

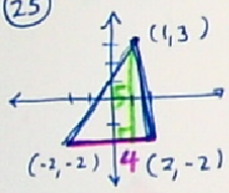
(3) $\frac{1 \text{ in}}{10 \text{ miles}}$ $\frac{1 \text{ mile}}{640 \text{ acres}}$

$= \frac{12.5 \text{ in}^2}{1} \cdot \frac{(10 \text{ miles})^2}{(1 \text{ in})^2} \cdot \frac{(640 \text{ acres})^2}{(1 \text{ mile})^2}$

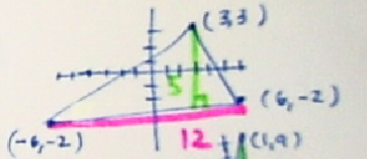
$12.5 (10)^2 (640) = 800{,}000$ acres

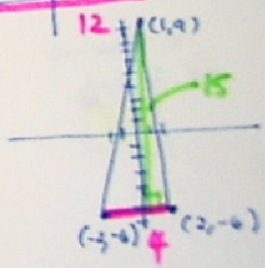
$12.5 (100)(640)$

(25)



original area $A = \frac{1}{2}bh$
$= \frac{1}{2}(4)(5)$
$= 10$





(a) new x-coord mult by 3

$A = \frac{1}{2}bh$
$= \frac{1}{2}(12)(5)$
$= 30$

mult by 3

(b) new y-coord mult by 3

$A = \frac{1}{2}bh$
$= \frac{1}{2}(4)(15)$
$= 30$

mult by 3

(c) both mult by 3

$A = \frac{1}{2}(12)(15)$
$= 90$

mult by 9

(27) Use same results

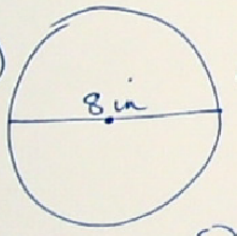
Original area = $17u^2$

(a) mult x-coord by 3
new area = $51u^2$ mult by 3

(b) mult y-coord by 3
new area = $51u^2$ mult by 3

(c) both mult by 3
new area = $17 \cdot 3 \cdot 3$ mult by 9
$= 153u^2$

(29)



$r = 4$
Area $= \pi(4)^2$
$= 16\pi$

(a) twice area $= 2(16\pi)$
$\pi r^2 = 32\pi$
$\sqrt{r^2} = \sqrt{16 \cdot 2}$ $r = 4\sqrt{2}$
$d = 8\sqrt{2}$ in

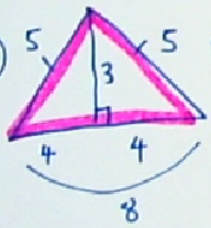
(b) Area $= \frac{1}{2}(16\pi)$
$= 8\pi$

$\pi r^2 = 8\pi$
$r^2 = 8$ $r = 2\sqrt{2}$
$d = 4\sqrt{2}$ in

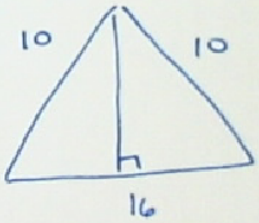
(31) $A = \pi r^2$ $A = 4\pi r^2$
$= \pi(2r)^2$

radius is doubled so is the diameter G

(33)



perimeter = 18



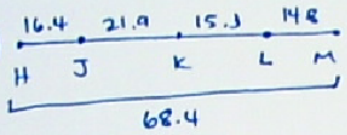
perimeter is doubled so 36

10.6

p.722 - 724

(19, 23, 25, 27, 29, 31, 35, 37, 39, 41, 45, 47)

17

(17) 

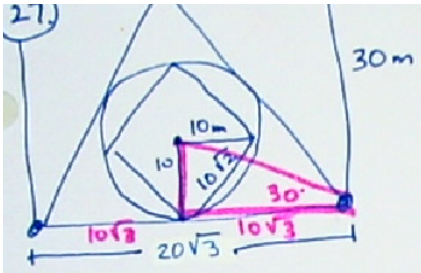
(17) not on LM $\frac{16.4+21.9+15.3}{68.4} = \frac{53.6}{68.4} \approx .78$

(19) not on JK or LM $\frac{16.4+15.3}{68.4} = \frac{31.7}{68.4} \approx .46$

(23) red → $\frac{180°}{360°} = \frac{1}{2}$

(25.) not on green → $\frac{180+45+45}{360} = \frac{270}{360} = \frac{3}{4}$

(27)



Area of rect $= (20\sqrt{3})(30) = 600\sqrt{3}$

Area of equil $\triangle = \frac{ap}{2} = \frac{10(60\sqrt{3})}{2} = 300\sqrt{3}$

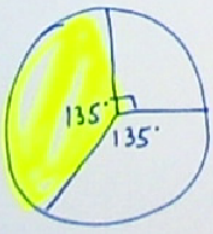
Area of square $= \frac{d_1 \cdot d_2}{2} = \frac{20(20)}{2} = 200$

Area of ⊙ $= \pi(10)^2 = 100\pi$

→ $\frac{300\sqrt{3}}{600\sqrt{3}} = \frac{1}{2} = .5$ (27)

(29.) → $\frac{\text{⊙ - square}}{\text{rect}} = \frac{314 - 200}{1039.2} \approx .11$

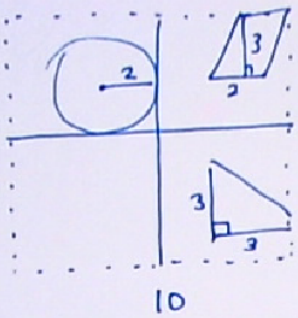
(31)



land on yellow

$\frac{135}{360} = \frac{3}{8}$ ← correct so A. is wrong

(35)



(35) $\frac{\text{circle}}{100} = \frac{\pi r^2}{100} = \frac{\pi(2)^2}{100} \approx .13$

(37) $\frac{100 - \text{circle} - \triangle - \square}{100} = \frac{100 - 4\pi - \frac{3 \cdot 3}{2} - 3 \cdot 2}{100}$

$= \frac{100 - 4\pi - 4.5 - 6}{100} = \frac{76.9}{100} \approx .77$

(39) $\frac{AC}{AE}$ or $\frac{BD}{AE}$ or $\frac{CE}{AE}$

(41) $\frac{\text{green + blue}}{\text{entire rectangle}}$ or $\frac{\text{yellow + red}}{\text{entire rectangle}}$

(45) $\frac{2(1.5)}{3.5(6)} = \frac{3}{21} \approx .14$ A