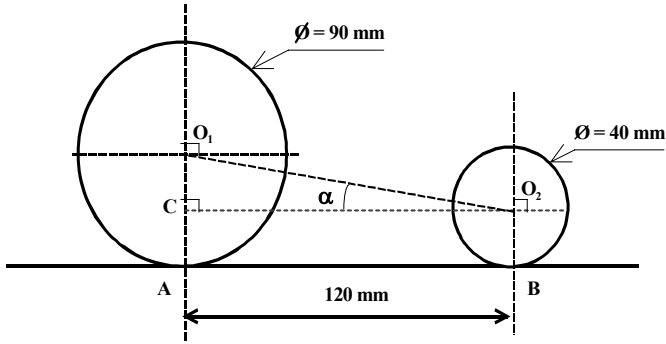
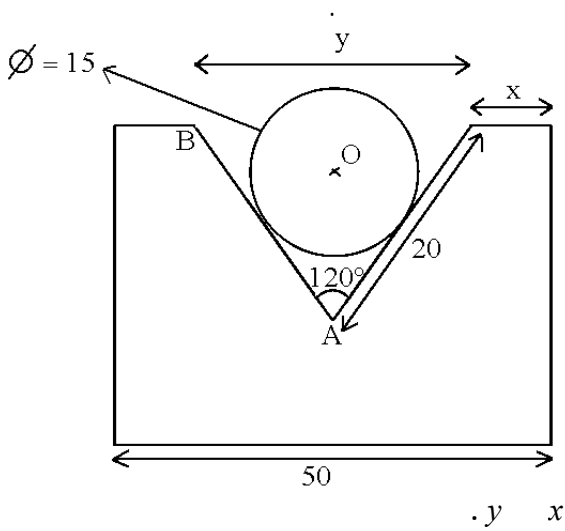


تمرين 7

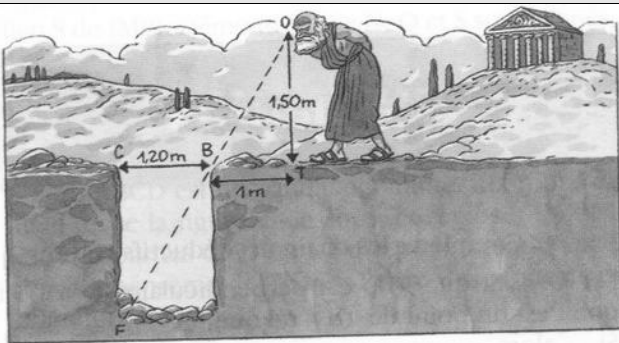


1.  $O_1O_2$
  2.  $\alpha$
  3.  $\alpha$
- $\phi$  :

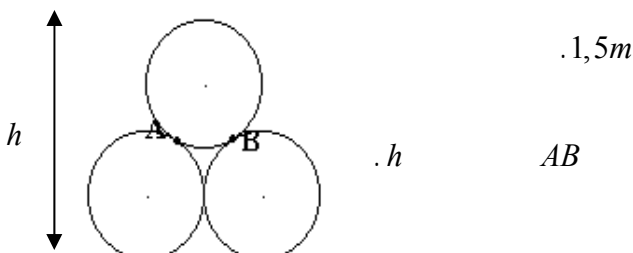
تمرين 8



تمرين 9



تمرين 10



تمرين 1

1.  $ABC$
2.  $H$
3.  $HC = AC \times \sin \angle BAC$
4.  $HB = AB - AC \times \cos \angle BAC$
5.  $BC^2 = AB^2 + AC^2 - 2AB \times AC \times \cos \angle BAC$
6.  $S = \frac{1}{2} AB \times AC \times \sin \angle BAC$
7.  $\frac{\sin \angle BAC}{BC} = \frac{\sin \angle ABC}{AC} = \frac{\sin \angle ACB}{AB}$
8.  $AB^2 + AC^2 = 2AM^2 + \frac{1}{2} BC^2$

تمرين 2

$$tg^2 x - \sin^2 x = tg^2 x \times \sin^2 x$$

تمرين 3

$$\sin x \times \cos x = 1$$

تمرين 4

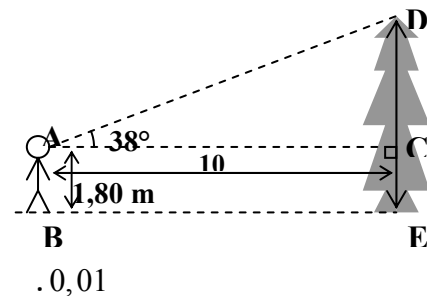
$$(a \times \sin x + b \times \cos x)^2 \leq a^2 + b^2$$

$$0 < \sin x + \cos x \leq \sqrt{2}$$

تمرين 5

$$\sin x \times \cos x = \frac{1}{2}$$

تمرين 6



## تمرين 11

- $ABC$
- $E [BC] \quad \square BAC$
- $(AB) \quad (AE) \quad C$
- $D$
- .1
- .2  $ADC$
- .3  $\frac{EB}{EC} = \frac{AB}{AC}$
- .4  $EB = \frac{AB \times BC}{AB + AC}$
- .5  $(AC) \quad E$
- $F (AB)$
- .6  $BF = \frac{AB^2}{AB + AC}$
- $\frac{BE}{BF} = \frac{BC}{AB}$
- $EF = \frac{AB \times AC}{AB + AC}$

## تمرين 12

- $ABC$
- $[BC] \quad M$
- $(AB) \quad [AM] \quad O$
- $(AC) \quad E \quad (BC) \quad O$
- $F (BC) \quad O$
- .1  $\frac{BE}{BM} = \frac{AO}{AM} = \frac{CF}{CM}$
- $BE = CF$
- .2  $J (AC) \quad (OE)$
- $I (AB) \quad (OF)$
- $(IJ) \parallel (BC) \quad \frac{AI}{AB} = \frac{AJ}{AC}$

## تمرين 13

$$tg1^\circ \times tg2^\circ \times tg3^\circ \times \dots \times tg88^\circ \times tg89^\circ$$

## تمرين 14

- $4\sqrt{5} \leq x \leq 5\sqrt{5}$
- $y \quad x$
- $y = x - 3\sqrt{5}$
- .1  $y \quad x$
- .2  $\sqrt{5} \leq y \leq 2\sqrt{5}$
- .3  $\frac{x}{y}; x-y; xy; x+y$

## تمرين 15

- $5 \leq x \leq 7 \quad x$
- $E = x^2 - 2x - 8$  :
- $E$  .1
- $E = (x-4)(x+2)$  :
- $E$  .2
- $E = (x-1)^2 - 9$  :
- $E$  .3
- $E$  .4

## تمرين 16

- $ABC$
- $AB + AC - BC < 2\sqrt{AB \times AC}$  :

## تمرين 17

- $-4 \leq x \leq -1$  :
- $y \quad x$
- $5 \leq y \leq 9$
- :
- $\frac{x^2}{y^2 - 2xy}; \frac{x}{y}; xy; x-y; x+y$

## تمرين 18

- $n$
- .1  $n(n+2) - (n+1)^2$
- .2  $\frac{n}{n+1} < \frac{n+1}{n+2}$
- .3  $A = \frac{1}{2} \times \frac{3}{4} \times \frac{5}{6} \times \dots \times \frac{97}{98} \times \frac{99}{100}$
- $B = \frac{2}{3} \times \frac{4}{5} \times \frac{6}{7} \times \dots \times \frac{96}{97} \times \frac{98}{99}$
- $A < B$  :
- $A \times B$
- $A < \frac{1}{10} < B$  :

تمارين الكتاب المدرسي (المفيد في الرياضيات)

- .144 12 11 5 1 •
- .145 18 16 13 •
- .146 28 23 •
- .147 39 34 •
- .55 43 •
- .57 73 69 68 •