

Use this information as needed to answer questions on the MEAP High School Mathematics Test.  
You may tear this sheet out of your test booklet.

### Miscellaneous

Distance = rate  $\times$  time  
 Interest = principal  $\times$  rate  $\times$  time  
 Compound Amount,  $A = P(1 + r)^n$ , where  
 $P$  = principal,  $r$  = annual rate,  $n$  = time in years  
 Circumference of a circle =  $\pi d = 2\pi r$   
 $\pi \approx 3.14$

### Algebra

Straight Line:  $y = mx + b$   
 For points  $(x_1, y_1)$  and  $(x_2, y_2)$   

$$m = \frac{y_2 - y_1}{x_2 - x_1}$$

Distance Formula:  

$$\sqrt{(x_1 - x_2)^2 + (y_1 - y_2)^2}$$

Quadratic Formula:  
 If  $ax^2 + bx + c = 0$ ,  $a \neq 0$ , then  

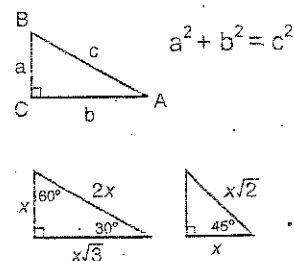
$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

### Sequences/Series

Arithmetic Sequence:  $a_n = a_1 + (n - 1)d$   
 Arithmetic Series:  $S_n = \frac{1}{2}n(a_1 + a_n)$   
 Geometric Sequence:  $g_n = g_1r^{n-1}$   
 Geometric Series:  $S_n = \frac{g_1(1 - r^n)}{1 - r}$

### Triangles & Trigonometry







$\sin A = \frac{\text{opposite}}{\text{hypotenuse}} = \frac{a}{c}$   
 $\cos A = \frac{\text{adjacent}}{\text{hypotenuse}} = \frac{b}{c}$   
 $\tan A = \frac{\text{opposite}}{\text{adjacent}} = \frac{a}{b}$



### Probability

${}_n C_r = C(n, r) = \frac{n!}{r!(n-r)!}$   
 ${}_n P_r = P(n, r) = \frac{n!}{(n-r)!}$   
 $P(A \cup B) = P(A) + P(B) - P(A \cap B)$ ,  
 if A and B are two events  
 $P(A \cup B) = P(A) + P(B)$ ,  
 if A and B are mutually exclusive  
 $P(A \cap B) = P(A) \times P(B)$ ,  
 for independent events

### Area

 Triangle:  $A = \frac{1}{2}(\text{base}) \times \text{height}$   
 Rectangle:  $A = \text{base} \times \text{height}$   
 Trapezoid:  $A = \frac{1}{2}(\text{sum of the bases}) \times \text{height}$   
 Parallelogram:  $A = \text{base} \times \text{height}$   
 Circle:  $A = \pi r^2$   
 Regular Polygon:  $A = \frac{1}{2}(a) \times \text{perimeter}$

(Continued on the next page)