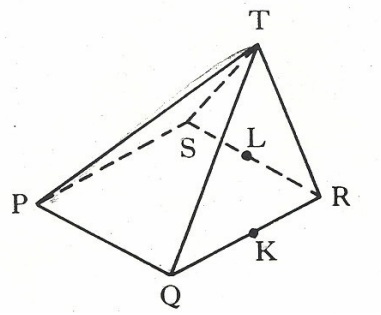
1.



PQRS is a horizontal square and TSR an equilateral triangle in a vertical plane. L is the mid-point of SR and K the mid-point of QR. The angle between PT and plane PQRS is angle

A TPQ
B TPK
C TPR
D TPL

2. Given that $f(x) = \frac{1}{x}$, $f'(x)$ is

defined as the limit as $h \to 0$ of

A $\dfrac{\frac{1}{x+h} - \frac{1}{x}}{h}$

B $\dfrac{\frac{1}{x+h} - \frac{1}{x}}{h}$

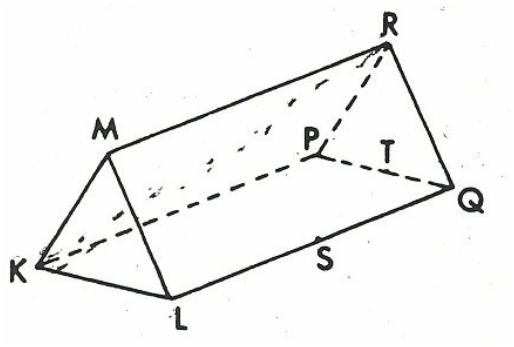
C $\dfrac{\frac{1}{x} + \frac{1}{h} - \frac{1}{x}}{h}$

D $\dfrac{\frac{1}{x} - \frac{1}{h} - \frac{1}{x}}{h}$

3. $\cos(90 - x)^\circ$ equals

A $\cos x^\circ$
B $-\cos x^\circ$
C $\sin x^\circ$
D $-\sin x^\circ$

4.



KLMPQR is a right equilateral triangular prism. S and T are the mid-points of LQ and PQ respectively. The angle between RK and plane KLQP is angle

A RKL
B RKS
C RKQ
D RKT

5. Which of the following is/are true for the line with equation $2y = 3x - 5$?

(1) It has gradient 3.
(2) It passes through the point (1, -1).
(3) It is parallel to the line with equation $4y = 6x - 5$.

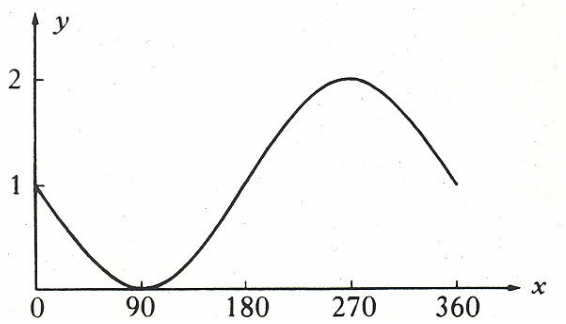
A (1) only
B (2) only
C (3) only
D Some other combination of (1), (2) and (3)

6. The equation of the line joining the points (1, 2) and (5, 3) can be written as

A $4x - y - 2 = 0$
B $4x + y - 6 = 0$
C $x - 4y + 7 = 0$
D $x - 4y - 17 = 0$

7. $f: x \to 2x - 3$ and $g: x \to 2x^2 - 3$; $(g \circ f)(x)$ equals

A $4x^2 - 6$
B $8x^2 - 12x + 6$
C $8x^2 - 24x + 6$
D $8x^2 - 24x + 15$

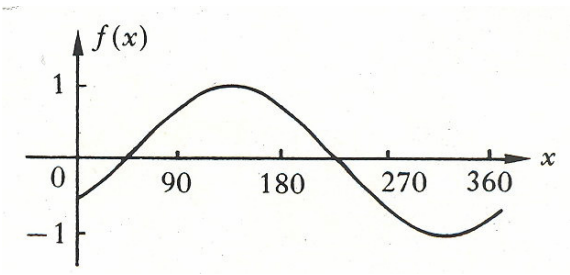
8. 

The above diagram is most likely to be part of the graph of

A $1 + \sin x^\circ$
B $2 \cos x^\circ - 1$
C $1 - \sin x^\circ$
D $2 - \cos x^\circ$

9. The equation of the straight line through the points (1, -2) and (-3, 4) is

A $3x + 2y = -1$
B $3x - 2y = 7$
C $2x + 3y = -4$
D $2x - 3y = 8$

10. 

The above graph is most likely to be part of the graph of the function $f: x \to$

A $\sin(x + 45)^\circ$
B $\sin(x - 45)^\circ$
C $\sin(45 - x)^\circ$
D $-\sin(x + 45)^\circ$