HSC General Mathematics Assignment 2

1. 344 gas units

a. 344×39.4652
$= 13576$ MJ (0d.p)

b. $13576 \times (1.0595 \div 100)$
$+\$25.78$

$= \$169.62$

2. \$15000 6% p.a
1.5% per quarter

8 years = 32 quarters

$A = P(1 + \frac{r}{100})^n$
$= 15000\,(1 + \frac{1.5}{100})^{32}$
$= \$24\,154.86$
$- \quad 15000.$
$\$ = 9154.86$

3. 3000 shares \$3.78 each

a. 3000×3.78
$= \$11340$

b. $\$12 + (\frac{2.5}{100} \times 11340)$
Total cost = \$295.50

c. stamp duty $= \frac{11340}{100} \times 0.50$
$= \$56.70$

d. dividend yeild $= \frac{\text{dividend}}{\text{market price}} \times 100$

$= \frac{0.31}{4.25} \times 100$
$= 7.3\%$ (1d.p)

4.

x	f	c.f
1	3	3
2	4	7
3	3	10
4	10	20

Because there are ~~so~~ an even no. of scores there will be 2 scores in the middle. I am looking for the 10th and 11th score.

10th score is 3
11th score is 4

median $= \frac{3+4}{2}$
$= 3.5$

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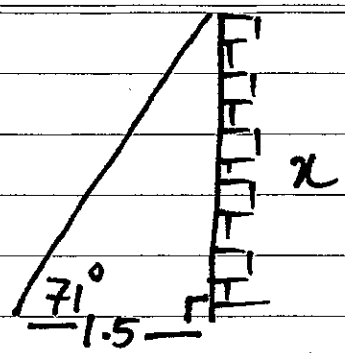
5.



$\tan\theta = \frac{O}{A}$

$\tan 71° = \frac{x}{1.5}$

$x = 4.36\text{m}$

6. P(drawn in order)

$= \frac{1}{{}^8P_8}$

$= \frac{1}{40320}$

OR//

$P(\text{drawn in order}) = \frac{1}{9} \times \frac{1}{8} \times \frac{1}{7} \times \frac{1}{6} \times \frac{1}{5} \times \frac{1}{4} \times \frac{1}{3} \times \frac{1}{2} \times \frac{1}{1}$

$= \frac{1}{40320}$

7. $P(4) = \frac{1}{6}$

in 72 rolls $\frac{1}{6} \times 72$

= 12 times (C)

8. There is 10 socks in draw. What is the probability of picking 2 of the same colour sock.

$P = \frac{{}^1C_1}{{}^9C_1}$ [because I need to assume he has already drawn sock and is trying to get the same colour for his 2nd sock)

$= \frac{1}{9}$

9.

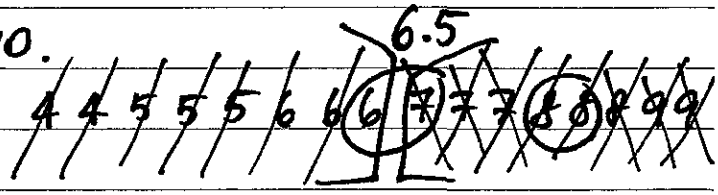
a. ${}^9C_5 = 126$ teams

b. $P(\text{particular players}) = \frac{{}^1C_1 \times {}^8C_4}{126}$

$= \frac{70}{126}$

$= \frac{5}{9}$

10.



$UQ = \frac{8+8}{2}$

$= 8$

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