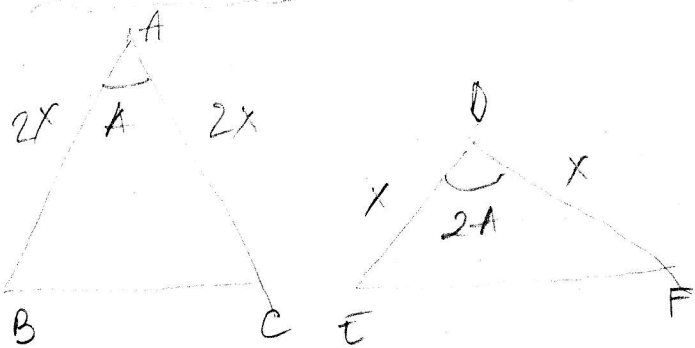


Problem 18

(9)

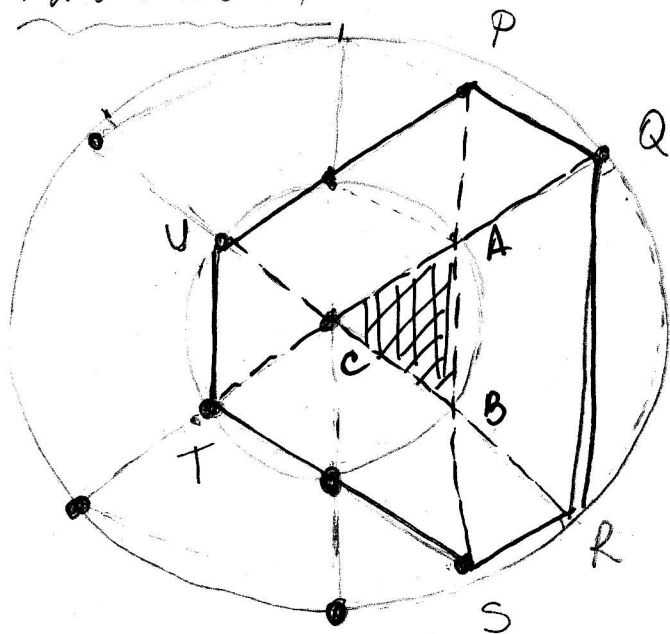


$$\frac{S_{\triangle ABC}}{S_{\triangle DEF}} = \frac{2x \cdot 2x \cdot \sin A}{x \cdot x \cdot \sin 2A} = \frac{4 \sin A}{2 \sin A \cos A} = 2 \sec A$$

$$= \frac{2}{\cos A} = 2 \sec A$$

Answer: B

Problem 19



$$S_{ABC} = \frac{50 \cdot 50 \cdot \sqrt{3}}{4} = 1082.5$$

Answer: A

Problem 20

$$(2^2 + 1 - 2^1)(2^2 + 1 - 2^1) = (2^2 + 1)^2 - (2^1)^2 = (2^2)^2 + 2^2 + 1$$

$$(2^4 + 1 + 2^2)(2^4 + 1 - 2^2) = (2^4 + 1)^2 - (2^2)^2 = 2^8 + 2^4 + 1 = 2^2 + 2^3 + 2^2 + 1$$

$$(2^{2^{k+1}} + 1 + 2^{2^k})(2^{2^{k+1}} + 1 - 2^{2^k}) = (2^{2^{k+1}} + 1)^2 - (2^{2^k})^2 = 2^{2 \cdot 2^{k+1}} + 2 \cdot 2^{2^{k+1}} + 1 - 2^{2^k \cdot 2} = 2^{2^{k+2}} + 2^{2^{k+1}+1} + 1 - 2^{2^{k+1}}$$