

MATH 425 REVIEW 1 ANSWERS

4. $3^{10} - 3 \cdot 2^{10} + 3 \cdot 1.$

5. $\binom{25-1}{20-1} \cdot \frac{1}{6^{20}}.$

6. $\binom{10}{2}p^8(1-p)^2 + \binom{10}{1}p^9(1-p) + p^{10}.$

7. $\frac{1}{2} \cdot \frac{10}{k+10} + \frac{1}{2} \cdot \frac{10}{(20-k)+10};$ 20 black balls in one box and none black balls in the other box.

8. $\frac{\binom{4}{1}}{\binom{52}{5}}; \frac{\binom{13}{1} \cdot \binom{48}{1}}{\binom{52}{5}}; \frac{\binom{4}{1} \cdot \binom{8}{1} \cdot \binom{43}{1}}{\binom{52}{5} \cdot \binom{47}{5}}; \text{no.}$