

Use the binomial theorem to expand $(3 - x^2)^3$.

$$\begin{array}{c|c|c|c} 1 & 3 & 3 & 1 \\ (3)^3 & (3)^2 & (3)^1 & (x^2)^3 \\ & (x^2)^1 & (x^2)^2 & \\ \hline 27 & - 27x^2 & + 9x^4 & - x^6 \end{array}$$

What is the coefficient of x^2y^3 in $(x - 5y)^5$?

5th row 4th spot in
 $x^5 x^4 x^3 x^2$

$$\begin{aligned} & 10x^2 \cdot (-5y)^3 \\ & 10x^2 \cdot -125 \cdot y^3 \\ & \boxed{-1250 x^2 y^3} \end{aligned}$$

SECTION 10.3 LOOK OVER YOUR NOTES

Find the probability of drawing all diamonds when you draw 5 cards from a deck of cards.

$$\frac{{}^{13}C_5}{{}^{52}C_5} = \frac{1287}{2598960} \approx \boxed{.0005 \text{ or } .05\%}$$

Find the odds in favor of drawing a heart when you choose from a deck of cards.

$$\frac{13}{39} = \boxed{\frac{1}{3}}$$

The responses to a survey are shown in the table. What is the experimental probability that a randomly chosen subject said "yes"?

Yes	No	Undecided
18	8	2

$$\frac{18}{28} = \boxed{\frac{9}{14}}$$

Find the probability that a dart thrown at a target will hit outside the square. The dart is equally likely to hit any point inside the target.



$$\begin{aligned} & 2\left(\frac{1}{2} \cdot 10 \cdot 5\right) \\ & 50 \\ & \text{area square} \end{aligned}$$

$$\begin{aligned} & \pi(5)^2 \\ & 78.5398 \end{aligned}$$

area outside square

$$\frac{28.5398}{78.5398} \approx .3634$$

$$\boxed{.3634}$$