Bellwork Alg 2B Monday, November 27, 2017

1. Write the equation of the circle if the endpoints of a diameter are $(4,-7)$ and $(8,3)$.

2. Write the equation of the ellipse whose center is at the origin with a horizontal minor axis of length 14 and a focus at $(0,-9)$.

3. n is an integer chosen at random from the set $\{5,7,9,11\}$ and p is chosen at random from the set $\{2,6,10,14,18\}$. What is the probability that $n+p=23$?

A. 0.1 B. 0.2 C. 0.25 D. 0.3 E. 0.4

4. A dress on sale in a shop is marked at $\$D$. During the discount sale its price is reduced by 15%. Staff are allowed a further 10% reduction on the discounted price. If a staff member buys the dress what will she have to pay in terms of D ?

A. $0.75D$ B. $0.76D$ C. $0.765D$ D. $0.775D$ E. $0.805D$

Bellwork Alg 2B Monday, November 27, 2017 Answers

1. Write the equation of the circle if the endpoints of a diameter are $(4,-7)$ and $(8,3)$.

Center: Midpoint of endpts of diameter $\left(\frac{4+8}{2}, \frac{-7+3}{2}\right)$ center: $(6,-2)$

Radius: Distance from center to either endpoint.

using $(8,3)$ $r = \sqrt{(8-6)^2+(3--2)^2} = \sqrt{2^2+5^2} = \sqrt{4+25} = \sqrt{29}$

EQ: $(x-6)^2+(y+2)^2 = 29$

2. Write the equation of the ellipse whose center is at the origin with a horizontal minor axis of length 14 and a focus at $(0,-9)$.

$2b=14$, $b=7$, $b^2=49$ $\quad c=9$, $c^2=81$ $\quad c^2=a^2-b^2$, $81=a^2-49$, $a^2=130$ $\quad b^2$ is under x^2

$$\frac{x^2}{49}+\frac{y^2}{130}=1$$

3. n is an integer chosen at random from the set $\{5,7,9,11\}$ and p is chosen at random from the set $\{2,6,10,14,18\}$. What is the probability that $n+p=23$?

A. 0.1 B. 0.2 C. 0.25 D. 0.3 E. 0.4

$$\text{prob} = \frac{\#\text{ favorable outcomes}}{\text{total }\#\text{ of outcomes}} = \frac{2}{20} = 1/10 = .1$$

Total # ways to pair a # from each set $= (4)(5) = 20$

ways to pair a # from each set to get a sum of $23 = 2$

$5+18=23$

$9+14=23$

4. A dress on sale in a shop is marked at \$$D$. During the discount sale its price is reduced by 15%. Staff are allowed a further 10% reduction on the discounted price. If a staff member buys the dress what will she have to pay in terms of D ?

A. $0.75D$ B. $0.76D$ C. $0.765D$ D. $0.775D$ E. $0.805D$

original price $= D$

Sale price after 15% discount $= .85D$

Final price after 10% discount of sale price $= .90(.85D)$