

2. To keep up with rising expenses, a motel manager needs to raise the \$40.00 room rate by 22%. What will be the new rate?

F. \$40.22
G. \$42.20
H. \$48.00
 J. \$48.80
K. \$62.00

$$\text{22\%} \rightarrow 1.22$$

$$40(1.22)$$

4. If $7 + 3x = 22$, then $2x = ? = 10$

F. 5
 G. 10
H. 12
J. 14
K. $\frac{58}{3}$

$$3x = 15$$

$$x = 5$$

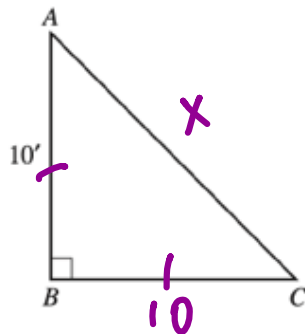
8. The product $(2x^4y)(3x^5y^8)$ is equivalent to:

- F. $5x^9y^9$
- G. $6x^9y^8$
- H. $6x^9y^9$
- J. $5x^{20}y^8$
- K. $6x^{20}y^8$

$$\underline{6}x^{\overset{4}{+}\overset{5}{+}9}y^{\overset{1}{+}\overset{8}{+}9}$$

13. In the isosceles right triangle below, $AB = 10$ feet.
What is the length, in feet, of \overline{AC} ?

- A. 5
- B. 10
- C. 20
- D. $\sqrt{20}$
- E. $10\sqrt{2}$



$$10^2 + 10^2 = x^2$$

$$200 = x^2$$

$$\sqrt{200} = x$$

$$\sqrt{2} \sqrt{100}$$

$$10\sqrt{2}$$

$$10\sqrt{2}$$

15. What polynomial must be added to $x^2 - 2x + 6$ so that the sum is $3x^2 + 7x$?

- A. $4x^2 + 5x + 6$
- B. $3x^2 + 9x + 6$
- C. $3x^2 + 9x - 6$
- D. $2x^2 + 9x - 6$
- E. $2x^2 - 5x + 6$

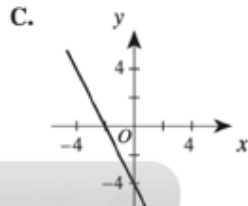
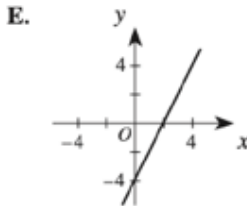
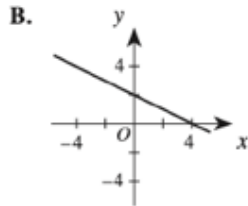
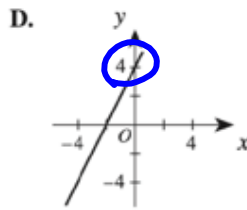
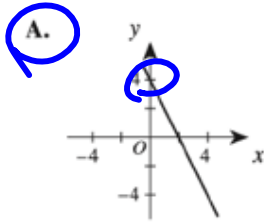
$$\begin{array}{r} x^2 - 2x + 6 + P = 3x^2 + 7x \\ -x^2 + 2x - 6 \quad \quad -x^2 + 2x - 6 \\ \hline P = 2x^2 + 9x - 6 \end{array}$$

28. If $2x^2 + 6x = 36$, what are the possible values of x ?

- F. -12 and 3
- G. -6 and 3
- H. -3 and 6
- J. -3 and 12
- K. 12 and 15

$$\begin{aligned} 2x^2 + 6x - 36 &= 0 \\ x^2 + 3x - 18 &= 0 \\ (x + 6)(x - 3) &= 0 \\ -6, 3 \end{aligned}$$

35. Which of the following is the graph of the equation $2x + y = 4$ in the standard (x,y) coordinate plane?

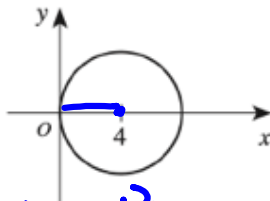


$y = -2x + 4$
 ~ slope
 ↑ y-int



38. In the standard (x,y) coordinate plane, the center of the circle shown below lies on the x -axis at $x = 4$. If the circle is tangent to the y -axis, which of the following is an equation of the circle?

- F. $(x + 4)^2 + y^2 = 4$
- G. $(x - 4)^2 + y^2 = 16$
- H. $(x - 4)^2 - y^2 = 16$
- J. $(x - 4)^2 + y^2 = 4$
- K. $x^2 + (y - 4)^2 = 16$



$(x - 4)^2 + y^2 = 16$

C (4, 0)

r : 4

$(x - h)^2 + (y - k)^2 = r^2$

Center (h, k) , radius = r