Extra Problems - Answers

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1. Simplify without the use of a calculator.

   $-25 \times -4 =$

   100

2. Evaluate without the use of a calculator.

   $(-9)^2 =$

   81

3. Identify the property illustrated in the following problem.

   $(6+10)+8 = 6+(10+8)$

   Associative Property of Addition

4. Simplify without the use of a calculator.

   $25 \div 5 + 2 \times 3^2 =$

   $25 \div 5 + 2 \times 9$
   $5 + 18$
   23

Note: The angles and figures may not be drawn to scale.

5. Use the given values of the variables to find the value of the following expression.

$10x + 5y$, when $x = 5, y = -2$

$10(5) + 5(-2)$

$50 + (-10)$

40

6. Simplify.

$x \cdot x^6 \cdot x^3 =$

x^{1+6+3}

x^{10}

7. Simplify.

$\dfrac{45x^5}{9x^3} =$

$5x^{5-3}$

$5x^2$

8. Simplify without the use of a calculator.

$(12)^0 =$

1

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9. Simplify without the use of a calculator.

$64^{\frac{1}{3}} =$

$\sqrt[3]{64} = 4$

10. Complete the ordered pair for the following equation.

$x + 7y = 15$

$(1, \_\_)$

$1 + 7y = 15$

$7y = 14$

$y = 2$

$(1,2)$

11. Find the x and y intercepts of the given linear equation.

$x + 3y = 9$

For the x intercept

$y = 0$

$x + 3(0) = 9$

$x = 9$

$(9,0)$

For the y intercept

$x = 0$

$0 + 3y = 9$

$3y = 9$

$y = 3$

$(0,3)$

Note: The angles and figures may not be drawn to scale.

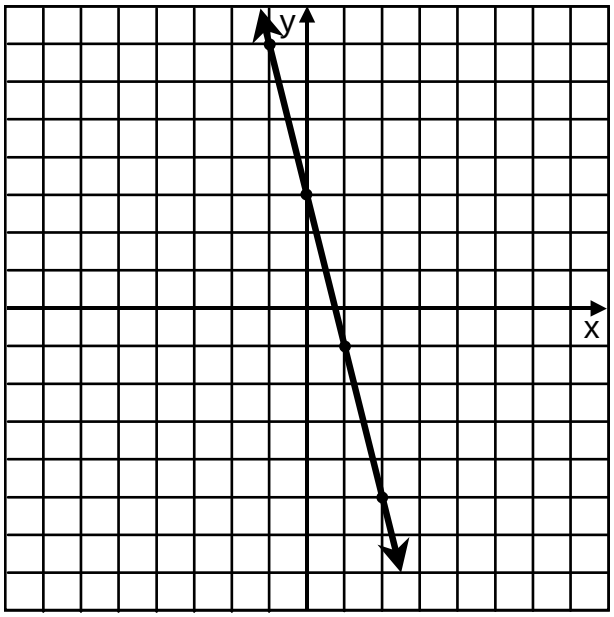
12. Find the slope of the line that contains the following points using the slope formula.

    $(-7,5)$ and $(5,-1)$

$$m = \frac{y_2 - y_1}{x_2 - x_1} = \frac{5-(-1)}{-7-5} = \frac{6}{-12} = \frac{1}{-2} \text{ or } \frac{-1}{2}$$

13. Graph the following linear equation.

    $y = -4x + 3$

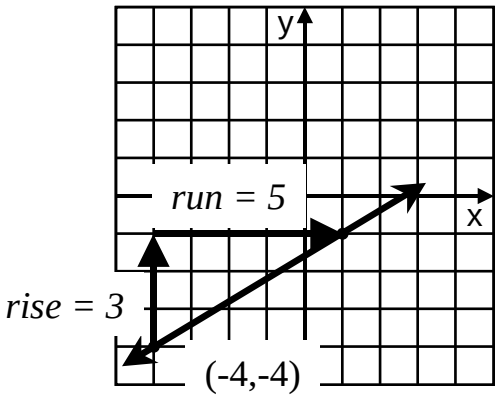


(0,3) (1,-1) (-1,7) (2,-5)

Note: The angles and figures may not be drawn to scale.

14. Find the equation of the line with the given point and slope. Graph the line.

$m = \frac{3}{5}, \quad (-4,-4)$



$y - y_1 = m(x - x_1)$

$y - (-4) = \frac{3}{5}(x - (-4))$

$y + 4 = \frac{3}{5}x + \frac{12}{5}$

$y = \frac{3}{5}x - \frac{8}{5}$

15. Find the distance between the two given points to the nearest tenth.

(6,4) and (–3,12)

$\sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$

$\sqrt{(6 - (-3))^2 + (4 - 12)^2}$

$\sqrt{81 + 64}$

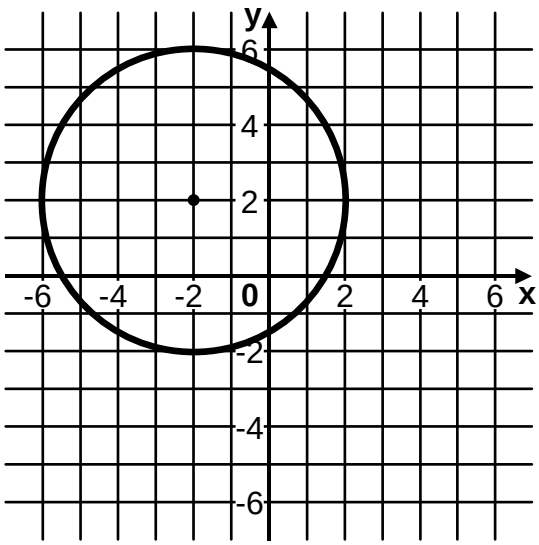
$\sqrt{145}$

12.0

Note: The angles and figures may not be drawn to scale.

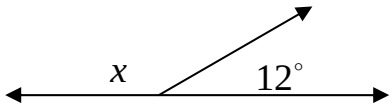
16. Graph the following equation.

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



(2,2) (-2,6) (-6,2) (-2,-2)

17. Find x if the angles are supplementary.



$180^\circ - 12^\circ = 168^\circ$

$x = 168^\circ$

Note: The angles and figures may not be drawn to scale.

18. Convert the following decimal measure to DMS (Decimal Minutes Seconds).

45.543

45°

$.543 \cdot 60 = 32.58$

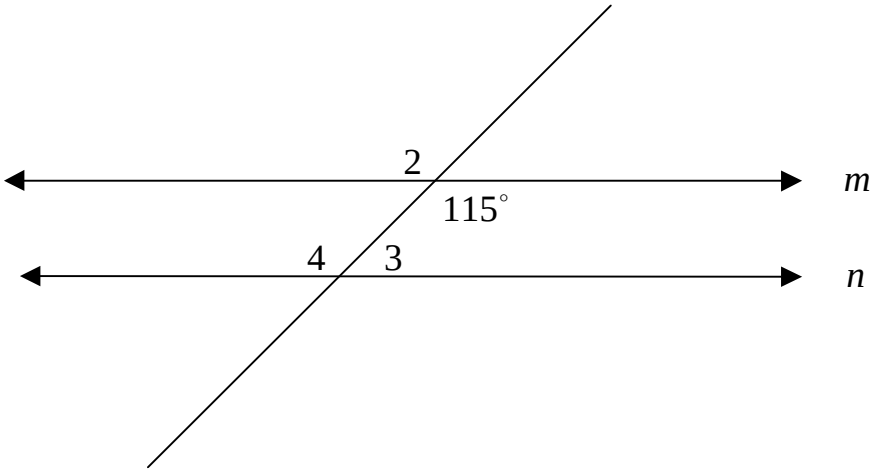
$32'$

$.58 \cdot 60 = 34.8$

$34.8''$

$45^\circ 32' 34.8''$

19. Given that lines *m* and *n* are parallel, find the measure of $\angle 2, \angle 3, \angle 4$ if



$\angle 2 = 115^\circ$

$\angle 4 = 115^\circ$

$\angle 3 = 180^\circ - 115^\circ = 65^\circ$

Note: The angles and figures may not be drawn to scale.

20. Find the length of the hypotenuse of a right triangle whose legs have lengths of 30 m and 40 m.

$a^2 + b^2 = c^2$

$30^2 + 40^2 = c^2$

$900 + 1600 = c^2$

$2500 = c^2$

$50 = c$

$c = 50 \text{ m}$

21. Find the perimeter and area of the following figure.

$A = s^2$

$A = 7^2$

$A = 49 \text{ in}^2$

$P = 4s$

$P = 4(7)$

$P = 28 \text{ in}$

Note: The angles and figures may not be drawn to scale.

22. Find the circumference and area of a circle with a diameter of 30 inches to the nearest tenth.

$C = \pi\, d$

$C = (3.14)(30)$

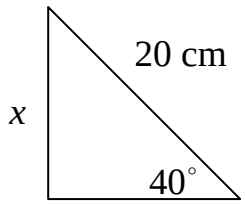
$C = 94.2 \text{ in}$

$A = \pi\, r^2$

$A = (3.14)(15)^2$

$A = 706.5 \text{ in}^2$

23. In the following right triangle, find the length of side x to the nearest tenth.



$\sin 40^\circ = \dfrac{x}{20}$

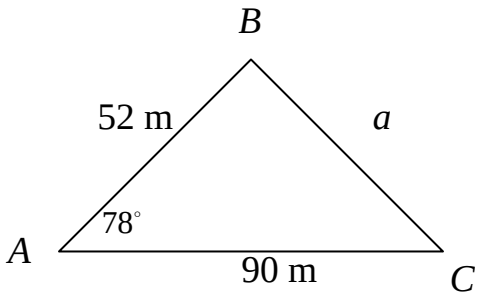
$.6428 = \dfrac{x}{20}$

$12.856 = x$

$x = 12.9 \text{ cm}$

Note: The angles and figures may not be drawn to scale.

24. Find the area of the given triangle to the nearest tenth.



$$A = \frac{1}{2}bc\sin A$$

$$A = \frac{1}{2}(90)(52)\sin 78^\circ$$

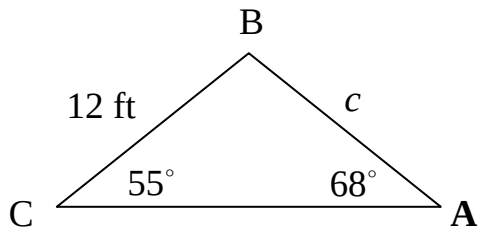
$$A = 2340(.9781)$$

$$A = 2288.754$$

$$A = 2288.8\ \text{m}^2$$

Note: The angles and figures may not be drawn to scale.

25. Find c in the given triangle to the nearest tenth.



$$\frac{\sin 55^\circ}{c} = \frac{\sin 68^\circ}{12}$$

$$\frac{.8192}{c} = \frac{.9272}{12}$$

$$.9272c = 9.8304$$

$$c = 10.60$$

$$c = 10.6 \text{ ft}$$

Note: The angles and figures may not be drawn to scale.